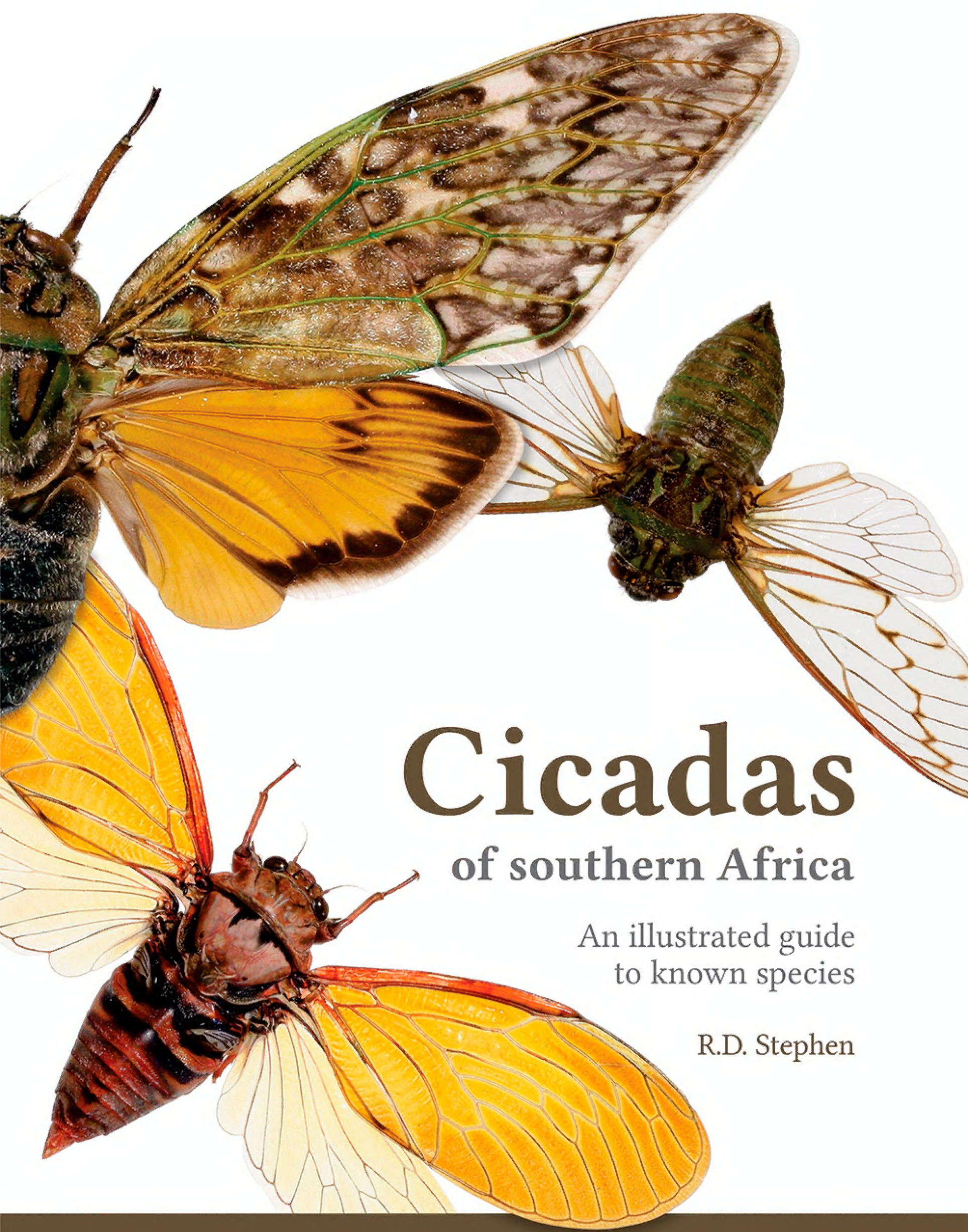

# Cicadas
## of southern Africa

An illustrated guide
to known species

R.D. Stephen

SURICATA 7

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An illustrated guide
to known species

By
R.D. Stephen

Honorary Research Associate of the
Ditsong Museum of Natural History
rdstephen37@gmail.com

SANBI
Biodiversity for Life
South African National Biodiversity Institute

Pretoria
2021

# SURICATA

*Suricata* is the generic name of the Suricate (*meerkat*), which is near-endemic to the arid western parts of southern Africa (occurring in Namibia, South Africa and Botswana; and just entering into a very small area in the extreme south of Angola). Behaviourally, suricates are socially inclusive and innately inquisitive, symbolising the commitment of South African National Biodiversity Institute (SANBI) to include all biodiversity and serve all of Africa and the scientific curiosity that precedes and drives research and publication of research results. Sister journal to SANBI's *Strelitzia*, *Suricata* is a peer-reviewed journal and publishes original and applied research, such as monographs, revisions, checklists, red lists, atlases and faunas of any taxa belonging to Regnum Animalia (the Animal Kingdom).


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# Preface

Most books about our natural sciences address subjects that are prominent, conspicuous and familiar, such as mammals, birds, butterflies and the indigenous flowers and trees of our rich natural heritage. As the interested public becomes more exposed to, and knowledgeable about, wildlife in general, specialist publications are appearing, focusing on the lesser-known invertebrates. We are now able to read about many species that are small, inconspicuous and were previously unappreciated.

This guide describes the diversity of insects that are well known for their shrill song on hot summer days, but which are so skilfully concealed, that they are often only seen when disturbed, or after a careful and surreptitious search. They can be heard, sometimes to the point of irritation, but are seldom seen. Even experienced naturalists are often surprised when told that there are scores of different species and that a dozen or more can usually be found in their immediate vicinity.

This publication sets out to lift the covers off this interesting, shy and defenceless creature, and answer some of the questions and misconceptions about it. Above all, it is intended to be an identification aid to all those admirable specialists and dedicated amateur workers and volunteers in museums, those active in conservation, ecological impact studies, databasing and other vital biodiversity and environmental studies. It could also be of assistance to teachers and lecturers in natural sciences, and the guides in our diverse national parks, nature reserves, botanical gardens and other conservation areas.

It is also hoped that it will encourage further interest and research into these largely unknown insects and their life histories, distribution, ecology and their niche in the southern African environment.

*Chattering voltage like a broken wire,*
*The wild cicada cried!*

Christopher Morley

# Acknowledgements

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Thanks also to the following people who gave assistance and professional advice on this publication, in particular Dr James Harrison, without whose encouragement it would never have appeared. Also to Mr A.P. (Dries) Marais, whose images and photographs highlight these pages and make the identification of species so much easier. To the late Dr Martin Krüger of the Ditsong National Museum of Natural History (formerly known as the Transvaal Museum) who allowed me time during other duties to research this work. Others at the museum who assisted were Barbara Dombrowsky, Tersia Perregil and Klaas Manemela. We also thank Simon van Noort, Margie Cochrane and Rina Krynauw from the Iziko South African Museum, Cape Town; Mervyn Mansell, Ian Millar and Michael Stiller from the National Collection of Insects, Pretoria; the Drs Gess from the Albany Museum, Makhanda (formerly Grahamstown); and the loan of specimens from the Bloemfontein Museum with the help of Riana Poller. The Natural History Museum, London (BMNH) advised on specimens in their possession and allowed access to their collection.

Grateful thanks to all those wonderful people who brought or sent African cicada specimens from many localities, including the following: Jonathan Ball, Tony Brinkman, André Coetzer, Richard Dean and Sue Milton, Barbara Dombrowsky, the late Neville Duke, Horst and Bernard Filter, Graham Henning, Frank and Allet Honiball, Dawie Jacobs, Douglas Kroon, Rob Kyle, Jan Legwai, Dries Marais, Mervyn Mansell, Andrew Morton, Ruth Müller, Pippa Parker (from her pool!), Martin Paulsen, Pierre le Roux, Anne Rasa, Vanessa Stephen and Peter Webb. In particular, those two intrepid nocturnal lepidopterists, the late John Joannau and Hermann Staude, who bagged many cicadas that came to their lights or were collected from remote areas. From further afield, African cicadas were received from the collections of Cyril Di Gennaro (Paris), David Emery (Australia), Hiroyuki Imai (Japan) and the late Karl Werner (Germany). Grateful acknowledgement also for the many tropical African donations from Steve Collins (Kenya), Ray Murphy (Malawi) and Alan Gardiner (Zimbabwe), who collected specimens for me in Botswana and Zambia. Thanks also to Bruce Gill (Canada), Gunda Diehl and Michael Ochse of Germany for specimens they collected in Ghana; John Daffue (Zimbabwe) and the late Ivan Bampton, resident in Tanzania, for specimens from Zambia and elsewhere. And finally to my dear wife, Cherry, who never complained about opening a container in her fridge and finding something unexpected therein.

Also, thanks must go to those enlightened conservation officers who, seeing the potential use of this book, issued collecting permits and gave permission and often active help on the ground. They include Dr Adrian Armstrong, Dr Hugo Bezuidenhout, Marion Forsyth, Koos de Wet, Scotty Kyle, Dr Ian Engelbrecht, and Roberto Zolho of the Gorongosa National Park, Mozambique. There are too few of you!

## Photo credits

Unless otherwise acknowledged, all photographs of specimens in this guide were taken by Mr A.P. (Dries) Marais.

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- Ditsong National Museum of Natural History, Pretoria
- National Collection of Insects, Pretoria
- Albany Museum, Makhanda (formerly Grahamstown)
- Iziko South African Museum, Cape Town

# Notes on known species

Why do we call this a guide to the known species? At the time of publication, we were aware of 168 southern African cicadas that have been scientifically described. After excluding the synonyms, they were mostly all included here, even though some have no accompanying illustration. We are also aware of several specimens that await the attention of the taxonomist – see also 'Species excluded from this publication' (p. 193).

# How to use this guide

The study of cicadas in Africa is still in its infancy with the exception of the genus *Stagira* Villet, 1996, in the subfamily Tettigomyiinae. Little work has been done on the genera of the smaller species in the subfamily Cicadettinae and original descriptions can be confusing.

As a citizen scientist without formal training, but with decades of fieldwork experience, and with a growing interest in our Cicadidae, it was thought that, in the absence of any illustrated publications on these interesting and harmless insects, an effort should be made to record the information that we have to date. Therefore, some of the taxa will be added at a later stage, once their identifications have been confirmed.

Since only a handful of people have specialist knowledge on cicadas, this guide is aimed at the information-seeking general public who would typically approach this guide with a view to learning something about cicadas or to identify a specimen. In an effort to stimulate further reading, more advanced literature is listed in the 'References' section (p. 198). It is expected that specialists in other fields of study, nature conservation officers, field scientists doing ecological impact studies, environmentalists, wilderness tour guides, teachers, botanists and the growing conservation-conscious public will find the listed literature useful.

## Taxonomic order

The order of the genera follows Distant (1906), Metcalf (1961) and Villet and Mijburg (2001) with some modification, and the species within each genus are generally listed alphabetically unless there is evidence of their relationships, as in the case of the genus *Stagira*. A recent publication (Marshall et al. 2018) altered the order and some of the tribes, which resulted in several changes and additions to this guide. These differ from Villet and Mijburgh's (2001) *Checklist of the cicadas of South Africa*, which has been the standard reference for some years. Molecular studies, currently underway at Rhodes University, are expected to further clarify some misconceptions and should alter the number of species.

## Species accounts

Each species account starts with the name of the cicada (e.g. *Munza otjosonduensis* Schumacher, 1913) above its illustration, followed by the name of the person who first described it, together with the date of the publication of the description (e.g. *Munza otjosonduensis* Schumacher, 1913). If the species was later moved to another genus, the original author's name and publication date are listed in parentheses. The genus name is always capitalised

and the species name always in lower case, even if the species name is derived from a proper noun, such as a place or prominent person. This practice was, however, not followed for early descriptions, because the Zoological Code of Nomenclature only took effect around 1850. For example: *Munza trimeni* (Distant, 1892) – W.L. Distant originally described this cicada as *Poecilopsaltria Trimeni*, in honour of Roland Trimen of the South African Museum in Cape Town and the description was published in 1892. In 1904 he transferred the name to his new genus, *Munza*, which is indicated by the brackets.

Any synonyms are listed below the cicada's current scientific name. Generally, the synonyms are former names of the cicada, but which have, through revision, either proved to be duplicated, or have been replaced by subsequent publications. Synonyms are listed according to Sanborn (2014).

Host plants are included where known. The repository of the type specimen is also listed where known.

## Images

Illustrations are mostly of male cicadas except where they differ substantially, for example, in species showing dichromic variation, or where we were unable to find a photogenic male. Through borrowing suitable specimens for photography from various sources, the differences in mounting techniques are also illustrated. Some cases of variation are also shown. Localities are illustrated with distribution maps, with broad references described in the text, often limited to the only available information.

## Identifying characteristics

The term wingspan is used as a measurement of the size of the cicada with its wings spread. The wings of most of the cicadas illustrated here has been expanded to allow for easier identification. Occasionally, the length of a single forewing is given, usually from specimens that have not been mounted or that have been set differently – this is recommended for all species because of the effects of mounting posture on wingspan, which could lead to inaccurate measurements.

Some identifying characteristics have been listed in the introduction to each genus. Readers will quickly notice that there is almost no information on the life histories of our cicadas. Apart from studies done on *Pycna sylvia*, where a female was observed laying eggs and late instar nymphs were excavated from underground, and the mapping of the emergence of two Karoo cicada colonies by Dean & Milton (1991), not one of our cicadas has had its full life cycle recorded.

## Distributions

The distribution maps have been drawn from label information of pinned specimens in museums and private collections. The available information on the distribution of southern African cicadas is therefore limited to the specimens that have been collected so far. For example, we have very little information from Mozambique, although many species must have their ranges

extended into that country. Unfortunately, the anti-personnel mines, indiscriminately sown during past conflicts, tend to discourage collectors. The best-looking forests are those avoided by the tree-cutting locals for good reason!

## Common names

There are no common names for our cicadas. Australians can refer to the Black Prince, Greengrocer or Double Drummer, their common and conspicuous species. The *Field guide to insects of South Africa* (Picker et al. 2002) gives seven common names for the illustrated cicadas. With eleven official South African languages to consider, even the task of finding an equivalent name for 'cicada' has been formidable. In Afrikaans it is known as a *sonbesie* which translates to 'sun beetle' (even though it's not a beetle), and a vociferous throng of Zulus, upon being asked about the shrill noise coming from a particular tree, said it was made by a *nyenzi.* In Venda, however, children being taught about the edible mopani worm (which ecloses into the Saturnid moth *Imbrasia belina*) thought that they were the offspring of cicadas, because cicada calls were prominent at the same time that the caterpillars emerged. In Eswatini they are called *songetsi.* Cicadas respect no international boundaries and suitable common names for some of our species may even be found in neighbouring states. In fact, few people have ever seen a cicada – 'Oh, you mean a Christmas beetle!' they exclaim with sudden illumination, giving you a look that implies that you don't know what you are talking about.

isiXhosa names are (*isi*)*bawu* (*izibawu*) and (*i*)*nyenzane* (*iinyenzane*) *isihlonono.* There are likely to be as many names as there are indigenous languages and dialects. In northwestern Namibia alone, several are recorded by the National Museum of Namibia in the musical languages of the indigenous peoples on a poster, *Insects and Culture in Namibia*: *sore-nû, soretsi lélé* (Damara); *ombambi yo mutenya* (Herero); *eilili* (Dhimba); *embulunyenye* (Kolonkadhi); and *embulunganga* (Kwanyama).

# What is a cicada?

There are some 3 000 species of cicada described worldwide. The earliest known cicada fossils date from the late Cretaceous period (about 60 million years ago). The cicada, *Platypedia triassica*, fossilised about 40–50 million years ago, looks much like our present day cicadas.

Cicadas belong to the fifth largest order of insects, the Hemiptera, or true bugs, with mouthparts adapted for piercing and sucking. They feed mostly on plants (i.e. they are phytophagous), although many hemipterans are predacious carnivores, usually feeding on other insects. The order Hemiptera is divided into four suborders, the Sternorrhyncha, Auchenorrhyncha, Coleorrhyncha and Heteroptera. Cicadas are members of the Auchenorrhyncha, which are all plant feeders. They are characterised by their ability to produce sound, although they are not unique in this regard. In general, they are harmless, defenceless insects, which are preyed upon by a wide range of predators, including humans.

The immature cicada spends most of its life as a nymph underground where it feeds by sucking xylem fluids from roots (White & Strehl 1978).

A mature cicada is a winged, flying insect that feeds on plants by sucking sap through a rostrum or proboscis, and that has the ability to make audible sound. Ants gather sap from the feeding holes that the cicadas leave behind (Figure 1). The Cicadidae include some of our largest insects. Tropical specimens include some veritable monsters with wingspans exceeding 120 mm. Others are much smaller insects, often found in grass, that communicate with a series of soft clicks or churrs.

They are harmless and do very little damage to crops in our region, which is probably why they have received so little attention. These days they are considered to be biological indicators, as they are sensitive to pollution and environmental damage.

Figure 1: Ants (*Myrmicaria natalensis*) rush to gather sap from cicada feeding holes in KwaZulu-Natal. Strangely, they also explore the spot from where the two cicadas were flushed. Photograph: Kevin Cockburn

# Life history

No life histories of African cicadas have been fully explored and described. This is probably due to the fact that cicadas are innocent of causing damage to crops, carry no disease and do not disrupt human lives to any extent. They have, therefore, escaped the entomological scrutiny given to other economical pests like locusts and citrus scale insects. Recently, some research has been undertaken to study the life history of the cicada *Pycna sylvia.*

# Cicada communication

*Blessed are cicadas' lives,*
*For they are blessed with voiceless wives.*

Xenarchus

Only male cicadas sing. As a young boy, I used to think that the cicada had some hidden orifice out of which it would expel air, like a demented referee blowing on a whistle. A cicada has a sophisticated sound-producing structure with which it can advertise its readiness to mate: the male has a membrane over an air sac on each side of the abdomen on its dorsal side called a tymbal. In the subfamily Cicadinae, it is usually covered by a tymbal cover. Inside these chambers is a plate (tymbal) which is flexed by a nerve-operated muscle to create a sound. Imagine flexing a tin lid to make a sharp 'clack' sound, and another when you release it. (Try it with a plastic or polyurethane bottle.) The tymbal plates similarly make a sound when flexed and released, and when vibrated at hundreds of times per second, give the cicada its penetrating call. In the Asian and African genus *Platypleura*, a single impulse produces several tymbal muscle contractions, allowing for very high pulse repetition frequencies (Villet 1988, 1992). The male of each species of cicada has a number of ribs or ridges on its tymbal plate which, together with minor sclerotisations, give the harmonics that the cicada uses to make its own distinctive sound.

Females are tuned to receive and only respond to the male's specific frequency. Therefore, if a cicada sings off-key, it will elicit poor or no responses from females – and may never mate! Under normal circumstances, males will only attract females of their own species.

Because cicada calls are species-specific, they can be recorded, printed as sonograms, and used for identification purposes. Museums now collect digital recordings of cicada calls, similar to birdsong libraries (Baker et al. 2015).

Some cicadas have a distress call when captured and many have a short warning or encounter chirp when startled, or when their territorial space is invaded by another cicada.

Larger-bodied cicadas frequently join in a chorus at dawn and dusk, when conditions for sound transmission are considered to be most favourable (Villet et al. 2003), often continuing into the night.

Both sexes have hearing organs on their ventral sides – for females to hear males calling and for males to hear other, rival males calling. They are covered with a plate called an operculum, which has a distinctive shape useful for diagnostic purposes.

In some of the smaller cicada species, particularly those in the tribes Cicadettini, Parnisini and Tettigomyiini, the male seems to search out the female instead. A male will call for a short period from a suitable leaf, then fly to a different spot and repeat the process. What the actual link is between the calling male and female during their courtship is still not fully understood. The females of many of these species produce clicking sounds with their wings that attract males.

Species in the genus *Neomuda* call while in flight.

*The setting sun, and music at its close.*

William Shakespeare, *Richard II*

# Identification

*Nomina si nescis, perit et cognitio rerum.*

[Who knows not the names, knows not the subject.]

Carl Linnaeus, *Critica Botanica* (1737)

To positively identify an unknown cicada specimen, it must be compared to the original published description of the genus and species, and, if necessary, with the type specimen. A type is the original specimen from which the first description was made. Types are invaluable references and they are kept under lock and key in museums. Unfortunately, many of our African cicada types are in foreign museums. The repositories holding southern African cicada types, that could be traced, are given in the species descriptions. As early descriptions of our cicadas can be ambiguous, it is often essential to examine the type to determine the identity of a specimen.

You will notice that the term 'type' is further subdivided. A holotype is the single specimen from which the original description is written. It is usually a male, but a female may be used in the absence of a male. If a female of the same species is available, it is also described in the same published description and often called the allotype, although it is also a paratype. Further specimens, male and female, are listed in the same publication as paratypes. To assist researchers, the name of the museum or collection where each described specimen is kept, is listed. If the original type specimen is lost or has deteriorated, a neotype may be designated by a later author.

Early descriptions of South African cicadas can be difficult to find and it is often necessary to search through old publications in dusty museum libraries. These descriptions date from 1758, when Linnaeus first described the Western Cape cicada, as *Cicada stridula*. Early collectors in southern Africa forwarded specimens to various European museums or institutions of their choice, where they were described in a number of languages, including Latin. In several cases, these were doctoral students who took their material home to supervisors. Occasionally, the same species was named and published independently by more than one taxonomist – these subsequent names are listed as junior synonyms for each species with the first published name receiving priority. Unfortunately, some of these early descriptions proved to be unreliable and confusing, and had to be revised later. The much respected authority on cicadas, W.L. Distant wrote in the *Annals and Magazine of Natural History* (1897), 'The legacy of bewilderment left to students of the *Cicadidae* is already so sufficing that it is earnestly to be hoped that such difficulties will not be increased by other writers unfamiliar with the family.'

In 1960 Dr Jiri Dlabola of Prague wrote that in the subfamily Cicadinae, identification from published material was comparatively uncomplicated, but not so with the subfamily Tibicininae, 'where even separation of genera is rather difficult'. He also questions whether the comparison of types can be satisfactory in every case, where different sexes have served as single specimens in the original description of some very closely related species.

With the paucity of trained systematists in this region, much work still remains. This taxonomic detective work is far beyond the reach of the average naturalist and those wanting a quicker answer. For example, more than two centuries have passed since Linnaeus formulated the binomial system of giving two-part names to all living things, yet this simple formula is still not understood by some editors or publishers.

Illustrations accompanying the early descriptions are rare and often rudimentary, but where they exist, they serve as valuable resources for identification purposes. The illustrations in some old publications are excellent, particularly etchings that were hand-coloured by Horace H. Knight in certain volumes of the *Transactions of the Entomological Society* of London. However, the taxonomic work on our cicadas, which is scattered throughout numerous tomes and papers in various languages, and published over a period of some 250 years, is mostly without accurate and detailed colour illustrations.

These days modern photography can be applied, which adds an essential visual dimension to the knowledge we have already gained.

*One picture is worth ten thousand words.*

Chinese proverb

# Natural predation

Cicadas are a natural food source for different kinds of birds: storks, ibises, hornbills, etc. I once received a crushed specimen of a large *Masupha* sp., removed from the gullet of a dead swallow – too big to swallow! Lizards and skinks, probably amphibians, rodents and predatory insects all take their toll in cicadas (Figure 2). Spiders, both the hunting and the web-spinning varieties, hunt them. I have occasionally taken a captured cicada (one of the smaller Cicadettini species) from a robber fly (Diptera: Asilidae), which was a useful indicator of which species was flying there at the time. A Fork-tailed Drongo once followed me about and attacked cicadas in flight that I had disturbed, but seemed unable to find them on the trees. Australia and the United States have wasps that prey exclusively on local cicadas, and in the tropical forests of the Far East, large cicadas are collected by the locals for food. They are also attacked by parasites and a fungus which targets nymphs underground. In Madagascar, lemurs love to eat them and monkeys anywhere do the same. In China the discarded exuviae are collected and boiled to make an infusion, which is believed to give babies an appetite. To protect themselves, cicadas use camouflage and concealment, largely their only defence. There are several beetle species of the family Rhipiceridae whose larvae have been found to parasitise the nymphs of Cicadinae (Scholtz & Holm 1985). Occasionally ectoparasitic mites are found on them.

Figure 2: A *Miomantis* sp. female, apparently feeding on a *Zouga* sp. Photograph: Kevin Cockburn.

# Collecting, mounting and storing cicadas

## Collecting

Collecting during daytime means listening for the calls of cicadas in the field, following the sound to its source, searching for the well-camouflaged insect among the foliage or on a branch, and then capturing the specimen with a butterfly net. However, it's not always as easy as it reads! Many cicadas, including the platypleurines, start and end the day with a chorus of about 20 minutes at times most conducive for the transmission of sound (Villet et al. 2003). During the day they will sing individually or in competitive choruses for a period, preferring sunny conditions and often being more active during the midday hours. Some of the grassland species start calling early in the morning and seem to avoid the heat of the day when they seek shade. Collecting in thorntree country with a fragile butterfly net has its own problems, which can sometimes be solved by using a scissor net. Captured specimens are carefully removed from the net to avoid damage to the legs and placed in a wide-necked plastic bottle with some grass for them to cling to. The bottle is later placed overnight in a kitchen freezer where they succumb naturally, and they can easily be thawed later for setting and identification.

Many cicadas are attracted to ultraviolet light and this method can successfully be used at night, particularly in forests or thick bush where they may be out of reach during the day. Sometimes this method delivers surprising results by attracting unexpected species. If they arrive in large numbers, caution must be taken to collect only a few of each sex and to free the others (before predacious ants arrive) by switching off the light. Colonies can easily be decimated by over-collecting, as females seem to be more receptive to, and attracted by, bright lights.

## Mounting or setting

Mounting cicadas closely follows the setting methods used by lepidopterists. The insect is pinned vertically and slightly to the right of the midline of the mesothorax to avoid destroying markings in the mid-line, and to safeguard the rostrum below. Success of the final appearance of the dried specimen will depend on the accuracy of this first pinning, particularly if conformity is desired in the layout of the specimen drawers. The pinned specimen is then secured in the groove of an appropriately sized setting board and the wings are spread using a sharp

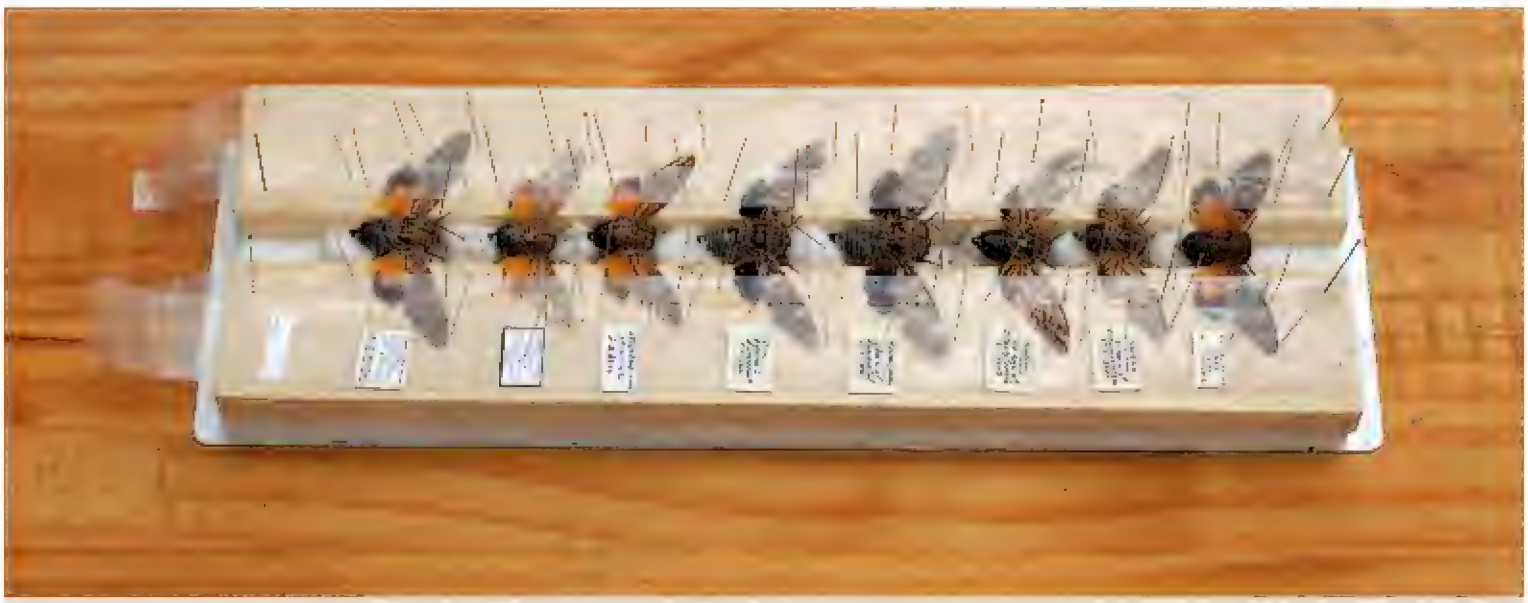


Figure 3: Mounted cicada specimens on a balsawood setting board, with labels. Photograph: R.D. Stephen.

needle. The hindwing clips onto the back edge of the forewing, which helps with mounting. Avoid making holes in the wings. The wings are secured with a strip of plastic or other transparent material which is stretched over the wings and held in place with a number of pins around the wings. The setting board is then placed in a drying cupboard for a few weeks to allow specimens to dry out (Figure 3).

## Materials

Professional insect pins should be used. They are 38 mm long, either rust resistant or made of stainless steel, and are available in a variety of thicknesses. Since they are manufactured overseas, they are, unfortunately, subject to a harsh import duty, making them fairly expensive.

Setting boards can be homemade from a wide variety of materials. All that is needed is a material with a smooth surface for sliding wings across, and soft enough for the setting pins to be able to penetrate easily and to have a good hold. Some lepidopterists like to make setting boards that are angled slightly upwards, but museum practice is to have them simple and flat, which helps with focusing when they are photographed. From experience, a favourite setting board is made of the following: a thin aluminium sheet cut to form a rigid base, with top and bottom ends each projecting 10 mm to slide into grooves in a carry box; 13 mm thick, cheap, polystyrene filler; and 12 mm of smooth, soft, model-building balsawood. These are all glued together. The central groove is of a different width for each setting board, to accommodate different sizes of cicadas, and each groove has a strip of off-cut polythene sheeting (SPX foam) glued along its length to support the pinned insect. The result is a light, rigid board, durable and easy to use, which does not warp or swell in humid conditions, as is often the case with plywood.

## Storing

A collection of cicadas can be stored in anything from discarded cigar boxes (if you can still find them) to professional cabinets with glass-topped drawers (Figure 4). The old method of lining wooden drawers with cork is being phased out through the availability of modern

materials. Injection-moulded plastic trays are cheaper than the expensive carpentry involved in making hardwood drawers. The oils present in cork have proved to be corrosive to pins over time, and it is better to use inert closed-cell polythene sheeting, which is available in various densities and thicknesses, known locally as SPX foam. To protect the specimens from dust and damage, a sheet of glass is cut to the size of the tray and gives a close fit, providing the tray is kept flat to avoid buckling. They can be stacked on top of each other as long as the bottom one is on a flat surface.

Collections should be inspected regularly. Mould and damp are problems to watch out for in tropical and humid climates. Pins may rust over time, especially near the coast. Inspection of very old collections donated to the Ditsong National Museum of Natural History (formerly known as the Transvaal Museum) shows that the poor quality pins of those days rust and break off where they have been inserted into cork, and also inside the body of the insect itself. If the pins are not replaced in time, the rust will expand to destroy the specimen. Also, the collection will always be at risk from invasive insects such as fishmoths and museum beetles (Dermestidae) which lay their eggs on dead matter. Their larvae bore into the body of specimens and can destroy a collection, or at least do great damage, within a matter of weeks. Glass-topped trays or drawers, regularly inspected, quickly reveal traces of the brown dust left under a specimen

Figure 4: A drawer with a collection of different *Munza* species. It is slotted to take a glass lid. The deep slot at the top of the drawer was once used to contain naphthaline to deter dermestid beetles and other destructive pests.

attacked by dermestids. Lining the trays with white SPX foam or white paper helps to make such traces quickly noticeable. There are a number of volatile chemical products that will deter these destructive pests, but opinion is divided as to whether they may be a risk to one's health. The practice in some museums (in deference to the health of the curatorial staff) is to use no chemical deterrent at all, but rather to rely on frequent inspection of the collections. At any suspicion of a problem, the entire drawer is deposited in a large freezer for several days to kill anything without having to opt for chemical control. As an added bonus, you can earn brownie points with your spouse by buying a freezer of the right size to fit your drawers or trays.

## Labelling

When setting a specimen, the vital locality and associated data must accompany the specimen from the moment it is pinned to the setting board. Once the dried insect is removed, this information must be preserved in the form of a printed label on the pin of the cicada. This information is essential and must include capture locality, date of capture and the name of the collector. Modern collectors include even more information in the form of extra labels on the pin such as exact location (GPS reading), altitude and other relevant collection information, e.g., 'in mountain grassland' or 'at UV-light'.

It is easy to produce your own labels on a home computer. They should be of uniform size for the sake of neatness and printed in black on white, acid-free paper. In older collections, non acid-free paper leaves a thin ring of rust around the pin. Print the name of the country at the top – specimens are often exchanged and sent overseas for study. To avoid confusion, be clear about the precise locality, reporting the latitude and longitude of capture, which are easily found using internet tools such as Google Earth (http:///earth.google.com/) if you don't have a GPS. For example, South Africa has more than fifty places named 'Rooiberg' and some thirty named 'Rooikop', not counting the vast number of farms with the same names. Specimen labels in older collections are frequently vague or misleading. The worst one I have heard of is the single label on a moth which asked, hopefully, 'Africa?' Nowadays details of insect collections are being recorded in national and global databases and accurate information is expected of collectors.

Without labels a collection is scientifically useless.

## Relaxing dried specimens

Cicadas are best set when freshly killed.

Cicadas that have dried or stiffened can be relaxed in a shallow container with a lid that fits tightly. Specimens are placed on a damp (not wet) cloth inside the container for a day or two. If the legs need straightening, they may have to kept in the containier for a little longer, keeping the ventral side in contact with the moisture. A close watch must be kept after the specimens have been in the closed container for more than a day, as mould and rot can ruin your specimens very quickly. Sometimes various chemicals are recommended to prevent the possibility of mould, but it has been found that they can have an effect on the colour of specimens, particularly green ones.

Specimens that have been preserved in alcohol are soft and malleable when taken out and may easily be set immediately, or they may have stiffened in a rictus of rigor mortis. However, if you leave them to drain and allow the alcohol to evaporate for two or three days, they should become soft again.

## Collecting permits

Each of the nine provinces in South Africa has its own department of nature conservation, and they all control the utilisation and exploitation of flora and fauna in their respective provinces through the issue of permits (Table 1). The different provinces have not been able to coordinate their requirements or documentation, which is sometimes user-unfriendly and may favour only serious scientific projects. Therefore, applications can be subject to long delays. The amateur butterfly collector who wishes to catch a few specimens when on holiday now has to apply for a permit several months in advance and respond to questions such as, 'the objectives [of your application] must be stated concisely but explicitly', 'how many of each species will be collected?' and 'comply with the provisions of the By-laws relating to Public Order, Public Places, and the Nature Reserves' rules and regulations, published under Administrator's Notice 519 of 14 December 1983 (as amended)'. Further restrictions include needing written permission from the owner to collect on private ground and permission to export or import specimens across provincial boundaries. Other national government departments controlling desirable collecting areas require their own written application and motivation forms. Furthermore, in some cases where permits are issued, one is required to submit full progress reports later. The aspirant collector, without professional qualifications and affiliations, is stymied and turns their interests to other channels to the detriment of the entomological community. Somehow allowances must be made for the responsible amateur. It would be to their advantage to join an interest group, such as the Lepidopterists' Society

Table 1: Organisations issuing collecting permits

| Province | Contact details |
|---|---|
| Limpopo | Dorothy@mtpa.co.za |
| North West | bdiole@nwpg.gov.za |
| Gauteng | Not presently active (2020) |
| Mpumalanga | bropapecn@ledet.gov.za |
| KwaZulu-Natal | permits@kznwildlife.com |
| Free State | desteapermiti@gmail.com |
| Northern Cape | denecpermits@ncpg.gov.za |
| Eastern Cape | noluthanda.bam.escape.gov.za |
| Western Cape | capenature.co.za/permit – apply online |

Most of the above addresses for permits are courtesy of Google and were correct in 2020. They are likely to change.

of Africa with its code of ethics, or the Spider Club or one of the many societies or groups devoted to birds, plants or invertebrates. Photography is another way of 'collecting' species.

However, we must appreciate the point of view of nature conservation officers who have to protect our vanishing wildlife, and their need for watertight legislation and controls to stand up to cross-examination to obtain a conviction in court. The permit application forms that seem so daunting are designed to cover all forms of wildlife, both zoological and botanical, and the many different research requirements. So, if you take your interest seriously, and intend to collect specimens, avoid being apprehended without documented permission.

## Donating collections

Sadly, private collections accumulated over many dedicated years are often lost after the death of the collector or where interest is abandoned. On several occasions we have met relatives who 'could not bear to part with a family member's hobby' and stored it in the garage, where it was forgotten for enough time to allow the dermestid beetles, mice or damp to destroy it. People emigrating or traveling often leave a collection with someone 'to look after it', with distressing results. Occasionally one meets up with someone who mentions having collected (usually) butterflies for a while as a teenager. Upon enquiring about their whereabouts, one is often met with responses like, 'No idea, they were probably thrown out when we moved to the Cape', or sadly, 'When the requirements for collecting permits became so stringent, it became too much trouble, so I stopped collecting'.

Useful historical and locality information may also be lost with the specimens.

All collectors should make some provision for the future disposal of their collections, bequeathing it to a museum or some other responsible institution, and discuss the proposed donation with the collection manager to have a good idea of their requirements, and to find out whether they are prepared to accept the collection, as spare drawer space is often unavailable.

# The southern African region

For international readers, unfamiliar with the southern African subregion, some geographical information is included here.

## Climate

The southern and southwestern coastal area of South Africa is considered to have a Mediterranean-type climate with winter rainfall from May to August. The eastern coastal area is subtropical, with coastal dune forests and several patches of isolated tropical forests. This area, together with the higher central plateau, receives its rain in the summer months. Generally, southern Africa becomes progressively drier from the east until reaching the world's oldest desert in Namibia where rainfall is scant. The northern part of the subregion, often dependent on rainfall from central Africa, is a vast sand flat running through the central and northern parts of Namibia and Botswana and is thickly covered with woodlands that extend into Zimbabwe. The area is rich in cicadas that emerge in great numbers when the summer rains arrive in the form of thunderstorms. High mountain ranges in the Western Cape and KwaZulu-Natal are periodically snow-covered in winter, and grasslands at various altitudes are also home to many cicada species.

## Zones

The greater part of the African continent is zoogeographically designated as the Afrotropical Zone. This is an improvement on previous descriptions such as the Ethiopian Region, or Africa and its Islands. The Afrotropical Zone includes the African continent southwards from the Sahara Desert. It also includes the southern coastal part of Yemen and the islands of the western Indian Ocean and those of the South Atlantic to the west. The huge island of Madagascar is also included in this zone, but not the Cape Verde and Canary Islands off West Africa, which are included in the European/Mediterranean/North African or Palearctic Zone.

The southern African area is considered, for convenience, as a subregion of the Afrotropical Zone and is generally accepted as including the countries of Namibia, Botswana, Zimbabwe, the southern half of Mozambique, South Africa and the two smaller landlocked states of Eswatini and Lesotho. Its northern boundary is defined by the Cunene River in the west and the

Zambezi River in the east. It is an area of considerable ecological diversity (Figure 5) including desert, semi-desert, coastal forests, montane grasslands and savanna woodlands. Some remnants of gallery forest remain. The Cape Floral Kingdom in the south is world-renowned for its botanical diversity, and the Western Cape mountains are still being explored for new species of cicadas.

## Distribution and density

There are extensive gaps in our knowledge of the cicada distribution in our region. Many areas have never been explored specifically to record and map cicadas. Mozambique is an example. Table 2 gives an indication of their distribution by biomes, followed by South African extra-limital genera.

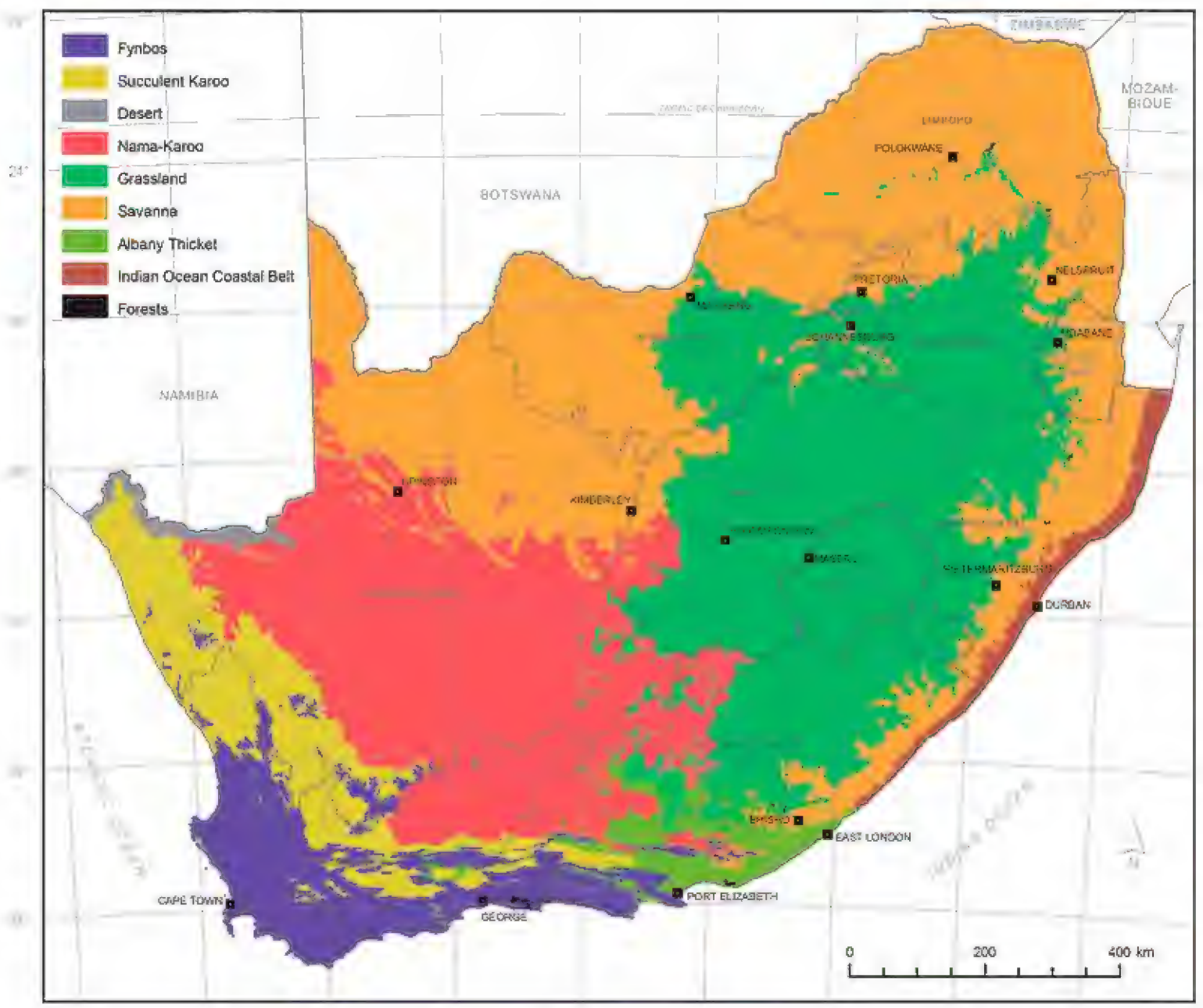



Figure 5: Biomes of South Africa, Lesotho and Eswatini (from Mucina & Rutherford 2006).

Table 2: Number of genera represented in each of the South African biomes (biomes after Mucina & Rutherford 2006), and of southern African countries

| Biome | Area (km²) | Genus | Number of taxa |
|---|---|---|---|
| Fynbos | 83 946 | *Azanicada* | 1 |
| | | *Capcicada* | 1 |
| | | *Melampsalta* | 2 |
| | | *Neomuda* | 3 |
| | | *Pinheya* | 1 |
| | | *Platypleura* | 4 |
| | | *Stellenboschia* | 1 |
| | | *Quintilia* | 3 |
| Forest | 430 | *Platypleura* | 1 |
| | | *Quintilia* | 1 |
| | | *Stagira* | 8 |
| Grassland | 354 954 | *Bavea* | 1 |
| | | *Calopsaltria* | 3 |
| | | *Gazuma* | 3 |
| | | *Mapondera* | 1 |
| | | *Melampsalta* | 4 |
| | | *Pauropsalta* | 1 |
| | | *Platypleura* | 1 |
| | | *Quintilia* | 1 |
| | | *Stagea* | 1 |
| | | *Stagira* | 12 |
| | | *Xosopsaltria* | 6 |
| Savanna | 412 544 | *Afzeliada* | 1 |
| | | *Brevisiana* | 1 |
| | | *Calopsaltria* | 2 |
| | | *Ioba* | 1 |
| | | *Koma* | 1 |
| | | *Lacetas* | 1 |
| | | *Mapondera* | 2 |
| | | *Melampsalta* | 2 |
| | | *Monomatapa* | 1 |
| | | *Munza* | 2 |
| | | *Oxypleura* | 1 |
| | | *Platypleura* | 7 |
| | | *Pycna* | 1 |
| | | *Quintilia* | 1 |
| | | *Soudaniella* | 1 |
| | | *Stagira* | 13 |
| | | *Taipinga* | 4 |
| | | *Tettigomyia* | 1 |
| | | *Trismarcha* | 1 |
| | | *Zouga* | 1 |
| Succulent Karoo | 83 284 | *Koranna* | 1 |
| | | *Masupha* | 3 |
| | | *Platypleura* | 1 |
| | | *Quintilia* | 3 |
| Albany Thicket | 29 128 | *Albanycada* | 1 |
| | | *Azanicada* | 1 |

Table 2: Number of genera represented in each of the South African biomes (biomes after Mucina & Rutherford 2006), and of southern African countries (continued)

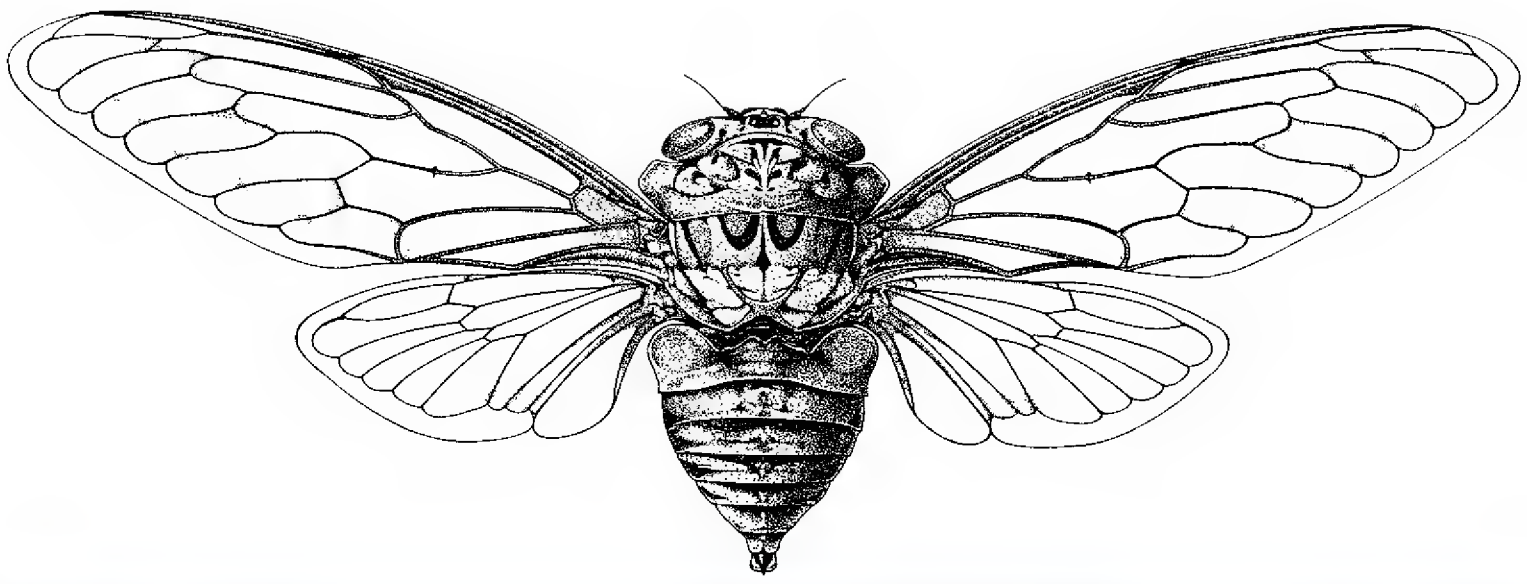
| Biome | Area (km²) | Genus | Number of taxa |
|---|---|---|---|
| Albany Thicke (continued) | 29 128 | *Kongota* | 1 |
| | | *Platypleura* | 3 |
| | | *Quintilia* | 2 |
| | | *Stagira* | 2 |
| Desert | 7 166 | *Koranna* | 1 |
| | | *Munza* | 3 |
| | | *Platypleura* | 1 |
| Nama-Karoo | 248 279 | *Abagazara* | 1 |
| | | *Masupha* | 1 |
| | | *Munza* | 3 |
| | | *Platypleura* | 2 |
| | | *Quintilia* | 5 |
| Indian Ocean Coastal Belt | 14 283 | *Azanicada* | 1 |
| | | *Nyara* | 1 |
| | | *Oxypleura* | 1 |
| | | *Platypleura* | 4 |
| | | *Pycna* | 2 |
| | | *Stagira* | 3 |
| | | *Taipinga* | 2 |
| | | *Tettigomyia* | 1 |
| | | *Tugelana* | 1 |
| | | *Ugada* | 1 |
| Botswana | | *Brevisiana* | 1 |
| | | *Ioba* | 1 |
| | | *Lacetas* | 1 |
| | | *Monomatapa* | 1 |
| | | *Munza* | 5 |
| | | *Oxypleura* | 1 |
| | | *Soudaniella* | 1 |
| | | *Taipinga* | 1 |
| Eswatini | | *Mapondera* | 1 |
| | | *Monomatapa* | 1 |
| | | *Pycna* | 1 |
| | | *Soudaniella* | 1 |
| Lesotho | | Platypleura | 1 |
| Mozambique | | *Afzeliada* | 1 |
| | | *Monomatapa* | 1 |
| | | *Munza* | 1 |
| | | *Orapa* | 1 |
| | | *Oxypleura* | 1 |
| | | *Platypleura* | 2 |
| | | *Pycna* | 2 |
| | | *Soudaniella* | 1 |
| | | *Trismarcha* | 1 |
| | | *Tugelana* | 1 |
| | | *Ugada* | 1 |
| Namibia | | *Abagazara* | 1 |
| | | *Hennicotettix* | 1 |

Table 2: Number of genera represented in each of the South African biomes (biomes after Mucina & Rutherford 2006), and of southern African countries (continued)

| Biome | Area (km²) | Genus | Number of taxa |
|---|---|---|---|
| Namibia (continued) | | *Koranna* | 1 |
| | | *Lacetas* | 1 |
| | | *Masupha* | 1 |
| | | *Monomatapa* | 1 |
| | | *Munza* | 7 |
| | | *Oxypleura* | 1 |
| | | *Severiana* | 2 |
| | | *Taipinga* | 1 |
| | | *Zouga* | 2 |
| Zimbabwe | | *Afzeliada* | 1 |
| Zimbabwe (continued | | *Calopsaltria* | 1 |
| | | *Lacetas* | 1 |
| | | *Monomatapa* | 1 |
| | | *Munza* | 2 |
| | | *Orapa* | 1 |
| | | *Oxypleura* | 1 |
| | | *Pycna* | 1 |
| | | *Soudaniella* | 1 |
| | | *Stagira* | 2 |
| | | *Trismarcha* | 1 |

## Cicada morphology

The following figures illustrate the different body parts of a cicada.



Drawing of a typical male cicada with hyaline wings. Scale bar = 10 mm.
Illustration: Martin Paulsen (July 2010)

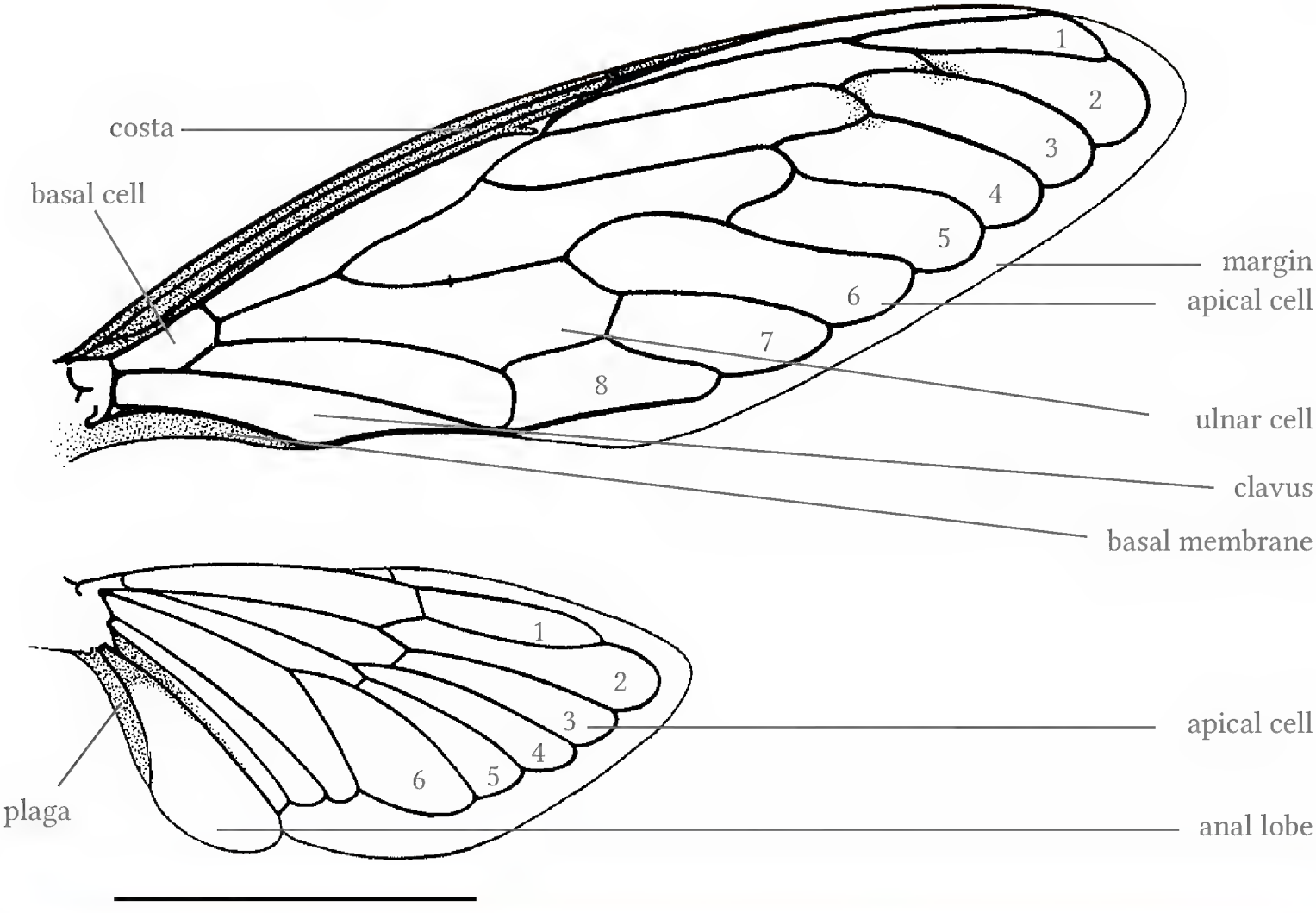



Illustration showing forewing (top) and hindwing (bottom). Scale bar = 10 mm.

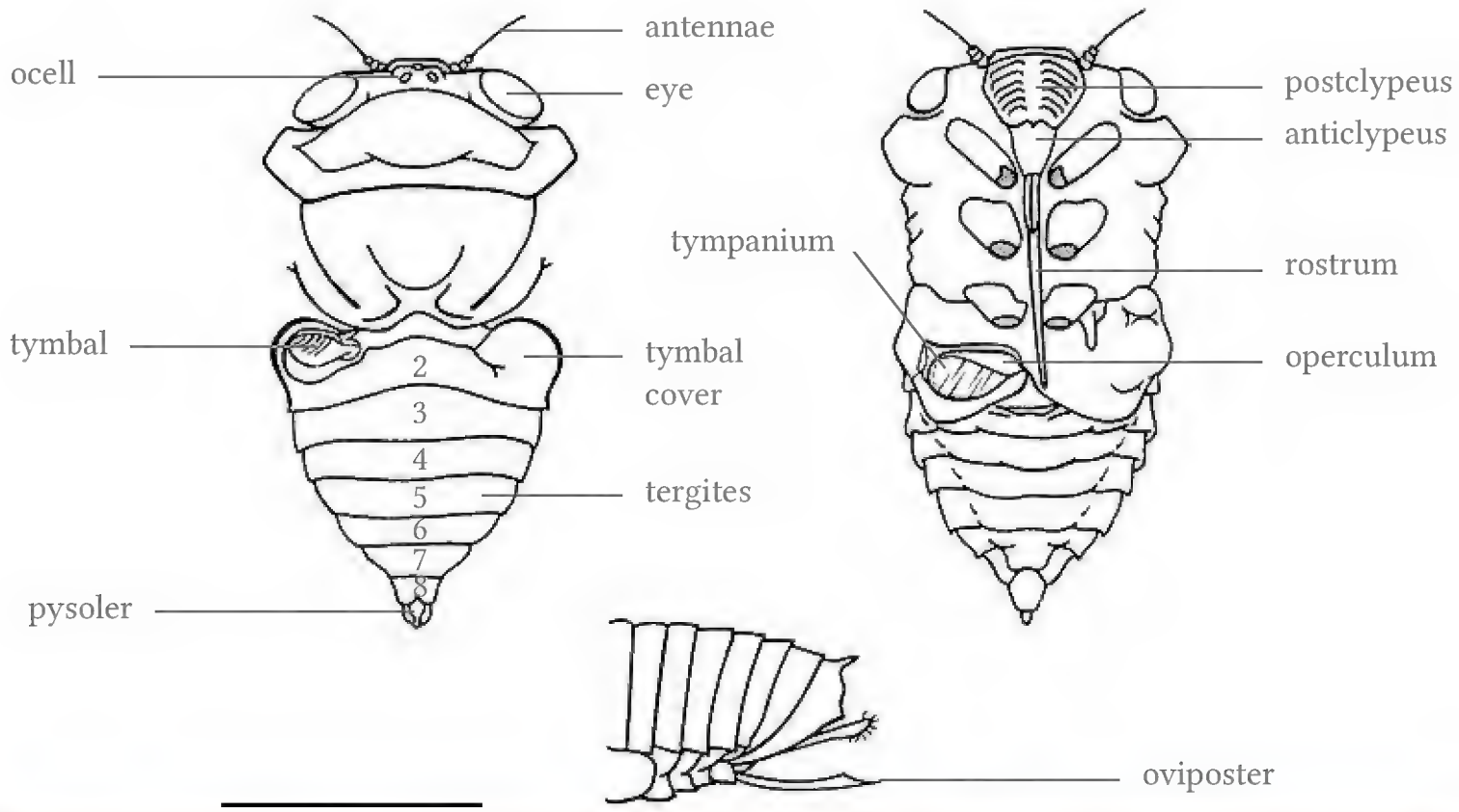


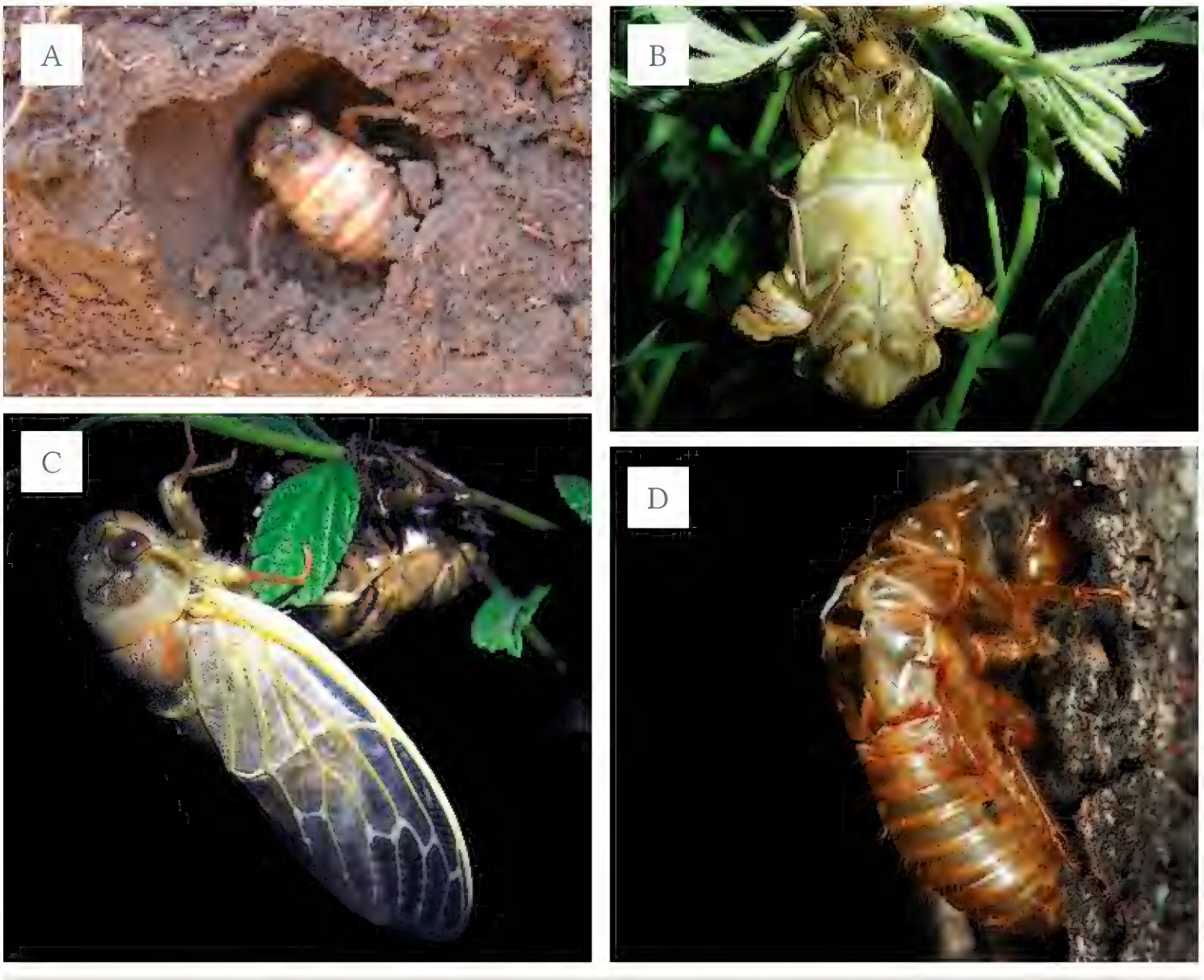

Illustration to show the lateral (left) and ventral (right) body parts, with legs removed. Bottom drawing is of the posterior end of the thorax of a typical female to show the oviposter. Scale bar = 10 mm.

An exuvium remains on a twig after emergence. Photograph: A.P. Marais.

Final instar of a *Pycna sylvia* nymph showing fossorial forelegs. Photograph: A.P. Marais.

Underside of a female cicada (*Pycna semiclara*). Photograph: A.P. Marais.

Underside of a typical male cicada. Photograph: A.P. Marais.




A, underground nymph; B, hatching cicada; C, fully hatched cicada; D, husk. Photographs: A, D.H. Jacobs; B–D, C. Deschodt.

# Family Cicadidae

The classification presented here is based on Marshall et al. (2018) and readers are urged to consult this work for more details on recent cicada taxonomy.

## Note on keying out cicadas

Occasionally cicadas with variations in the venation of the wings (more often in the forewings) are found making identification of single specimens difficult. Pead (1910) listed a surprising number of variations among the relatively few cicadas that he had captured where different numbers of apical cells were noted within the same species. Often the variation is apparent on one side only and comparison with a series of the same species quickly shows up the aberration.

## Museum acronyms

**Natural history collections**

| | |
|---|---|
| AFSC: | Sanborn Collection, Miami Shores |
| AMGT: | Albany Museum, Makhanda (formerly Grahamstown) |
| BMNH: | Natural History Museum, London |
| HUMB, HUM: | Humboldt State University Natural History Museum, Berlin |
| MfN: | Museum für Naturkunde (Humboldt University Museum), Berlin |
| MNHP: | Museum of Natural History, Paris |
| Mus. Berol.: | Musei Zoologici Berolinensis, or the Koeniglichen Universität zu Berlin |
| NHMZ: | National History Museum of Zimbabwe, Bulawayo |
| NHRS: | National History Museum, Stockholm |
| NMNW: | National Museum of Namibia, Windhoek |
| NMSA: | Natal Museum, Pietermaritzburg |
| SAMC: | South African Museum, Cape Town |
| SANC: | National Collection of Insects, Pretoria |
| TMSA: | Ditsong National Museum of Natural History, Pretoria (formerly Transvaal Museum) |
| UUZM: | Uppsala University Museum, Uppsala |

**Private collections**

| | |
|---|---|
| JBB: | Jonathan Ball Collection, Cape Town |
| RDS: | R.D. Stephen Collection, Centurion, Pretoria |
| MHV: | Martin H. Villet Collection, Makhanda (formerly Grahamstown) |
| RJM: | Ray Murphy Collection, Mzuzu, Malawi |

# Part 1

# Subfamily Cicadinae Latreille, 1802

## Tribe Orapini Boulard, 1985

### Genus *Orapa* Distant, 1905

- Space between pronotal lateral margins considerably greater than width of abdomen.
- Basal cell of each forewing slightly longer than broad.
- Forewings and hindwings slightly opaque.

## *Orapa numa*

(Distant, 1904)

*Pycna numa* Distant, 1904
*Orapa numa* Smith, 1989

**Appearance:** A greyish head and thorax, and a lack of pigment in the distal parts of the wings are typical of this genus. A cicada of distinctive apearance, it cannot be confused with any other, it is the only species of *Orapa* that enters our area. Wingspan: 67 mm (n = 15). Type: BMNH.

**Field notes:** *Orapa numa* can be found in the *Brachystegia* woodlands that cover the hills of eastern Zimbabwe, from Arcturus to Vumba and the remaining forests along the western border of Mozambique. Several other *Orapa* species are found further north.

Woodlands in Zimbabwe, home to *O. numa*. Photograph: A.P. Marais.

## Tribe Platypleurini Schmidt, 1918

Notes under genera include some identifying characters from Villet & Reavell (1989).

Marshall et al. (2018) showed that *Hamza* and *Platypleura* fall on the same branch of the family tree and are, therefore, synonyms. In an effort to maintain priority of Platypleurini (Marshall et al. 2018) over Hamzini Distant, 1905, Case 3761 has been submitted to the International Code of Zoological Nomenclature (ICZN) under Article 23.9.3 (ICZN 1999).

### Genus *Afzeliada* Boulard, 1972

- Width of head, including eyes, about equal to that of pronotum.
- Pronotum reduced to small, angular paranota.
- Rostrum extending to the first abdominal segment.
- Forewings usually long and narrow.

## *Afzeliada rutherfordi* (Distant, 1883)

**Appearance:** The narrow, hyaline wings are destinctive; with thick dark costal margins. Wingspan: 70 mm (n = 40). Type: MNHP.

**Field notes:** *Afzeliada rutherfordi* is found in the eastern half of Zimbabwe in open bushveld and woodlands, and also on the lower reaches of the lush Vumba Mountains. It was recorded as it came to light in the Dombe Forest, Mozambique. It is more common further north where many *Afzeliada* species have been described. From a brief experience in Mozambique, it seems difficult to capture, as it prefers upper branches of tall forest trees. However, it is attracted to ultraviolet lights. An unknown *Afzeliada* species was taken in 2004 in the forests of Venda, Limpopo Province, South Africa by Mr Pierre le Roux, which is the furthest south this genus has been recorded. This species has been captured from early October to January.

## Genus *Azanicada* Villet, 1989

- This genus is about to be formally synonymised with *Platypleura*.

# *Azanicada zuluensis*

(Villet, 1987)

**Appearance:** This cicada was removed from the genus *Platypleura* because of distinct differences in its genitalia, and in the angularity of the wings and paranota. The circumcaudal band is distinctly divided. The song of the type species is more like that of an *Oxypleura* or *Munza* species (Villet 1989a). However, it is awaiting publication to revert back to *Platypleura*. Wingspan: variable, mostly 63–73 mm, but some specimens as small as 53 mm (n = 7).

**Field notes:** Villet writes that it inhabits the seaward fringe of the milkwood (*Mimusops caffra*) forest and adjacent *Passerina*-dominated dune scrub. This ecotone is characterised by the tree *Maytenus procumbens*, which is its adult host plant. Larvae are restricted to areas of sandy beach soil supporting sedges. Its song also differs from that of other *Platypleura* species and is more like *Oxypleura* or *Munza*. It flies from about Hermanus in the Western Cape to KwaZulu-Natal and possibly further north. The adult is active from December to April. Host plant: *Maytenus procumbens*.

## Genus *Albanycada* Villet, 1989

- Forewing markings and shape similar to genus *Kongota*.
- Body relatively short, broad and cylindrical.
- Width of head across eyes slightly greater than width of mesonotum.
- Face slightly convex.
- Paranotal lobes small, rounded.
- Circumcaudal band present.

# *Albanycada albigera*

(Walker, 1850)

*Platypleura albigera* Walker, 1850
*Platypleura membranacea* Karsch, 1890

**Appearance:** The sexes are similar in size and markings, but there is a great deal of variation in the development of the dark markings on the wings; head and thorax can be green in more inland specimens. Wingspan: 50–57 mm (n = 18). Types: Holotype male in the TMSA, with 7 paratypes; 5 paratypes in SANC.

**Field notes:** The Eastern Cape is home to this attractive cicada and it can be heard calling from the low, xeric, euphorbiaceous veld types in the Albany and Fish River Valley Districts. They have been found around Makhanda (formerly Grahamstown) and Salem, and on top of the Ecca Pass. They fly fast between shrubs when disturbed. On two occasions they were observed concealed among aloe fruits, which, at rest, they resemble in shape. Specimens with bright green heads and pronota were found near Jansenville by André Coetzer. They fly throughout the summer months.

## Genus *Brevisiana* Boulard, 1972

- Width of head, including eyes, about equal to that of pronotum.
- Pronotum reduced to small angular paranota.
- Wings hyaline.
- Paranotal lobes rounded.

# *Brevisiana brevis*

(Walker, 1850)

*Platypleura brevis* Walker, 1850
*Platypleura simplex* Walker, 1850
*Cicada neurosticta* Schaum, 1853
*Oxypleura sobrina* Stål, 1855
*Oxypleura patruelis* Stål, 1855

♂

♀

# *Brevisiana brevis*

(continued)

**Appearance:** Males have a white powdery band across the distal end of the thorax which is absent in females; costal margin brown in male specimens, greenish in the female; wings hyaline, with shading basally. Wingspan: about 70 mm (n = 35). Type: BMNH.

**Field notes:** This species swarmed after the rains at Katima Mulilo in the Caprivi (Namibia) in 1984 where lights of the military base attracted thousands of individuals. Congregating with them were large numbers of *Oxypleura quadraticollis*, together with a few *Monomatapa insignis* and *Lacetas annulicornis*. One had only to sweep a butterfly net two or three times through the swarm around a bright security light to capture a football-sized mass of agitated cicadas; they covered every square centimetre of the surrounding trees and fences. The noise of their singing at night around a flood-lit outside stage forced the cancellation of a concert halfway through a choir performance! They occur from KwaZulu-Natal through Mpumalanga and Limpopo Provinces into Botswana, Namibia and further north, from October to April. Host plant: *Vachellia karroo* and other thorntree species.

## Genus *Capcicada* Villet, 1989

- Body broad and compact.
- Width of head across eyes equal to width of pronotum.
- Face flatly convex.
- Tegmina and hindwings broad with rounded angles, pigmented, but lacking the distinct white anal patches of many *Platypleura* species.
- Circumcaudal band complete.

# *Capcicada decora*

(Germar, 1834)

*Cicada decora* Germar, 1834
*Platypleura absimilis* Distant, 1897

**Appearance:** This is another cicada elevated to monotypical status from the genus *Platypleura* on account of its rounded wing shape, its lack of a typical white patch on the anal lobe, and considerable differences in its genitalia. The broad black border on the hindwing is diagnostic. Wingspan: usually 66–69 mm, but specimens from Nature's Valley, Eastern Cape, measured 60–64 mm (n = 14). Type: MfN.

**Field notes:** Found in the Western and Eastern Cape from almost sea level to high altitudes in the mountains, but restricted to where its host plants, *Protea arborea* and *Protea repens*, grow. They fly from December to February.

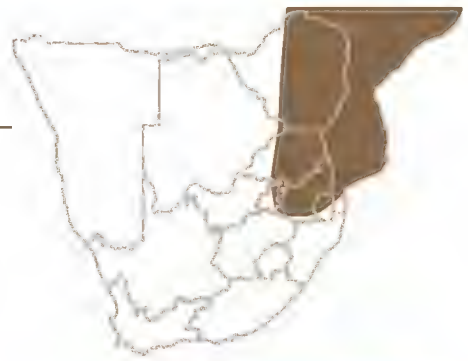
## Genus *Ioba* Distant, 1904

- Head and eyes wider than base of mesonotum.
- Costal margin not inflated or arched at base.
- Pronotum with its posterior margin little less in length than vertex.
- Its lateral paranota angles reach apex of basal cell in expanded tegmina.
- Size with forewings spread about 85–95 mm

# *Ioba leopardina*

(Distant, 1881)

*Poecilopsaltria leopardina* Distant, 1881



**Appearance:** This distinctive, large cicada has pointed paranota and distinctively patterned wings, which makes it easy to identify. Wingspan: variable, ranging from 85–95 mm (n = 20). Type: BMNH.

**Field notes:** Widespread in East Africa, it enters the southern African subregion through Zimbabwe and (marginally) Botswana into the Limpopo Province of South Africa where it is more localised. In Malawi they occasionally congregate in bushes of 1–2 m in height and sometimes dozens fly out when disturbed. Further north in Tanzania, they inhabit open *Combretum* bushveld. In southern Africa they fly from about October to January. Host plants: *Sclerocarya birrea* (maroela), *Julbernardia globiflora* (in tropical Africa), *Albizia amara*, *Dichrostachys cinerea* and the exotic *Toona ciliata.*

## Genus *Koma* Distant, 1904

- Lateral pronotum margins only slightly prominent, but not medially angulately expanded and not reaching basal cell of tegmina.
- Rostrum reaching posterior coxae.

# *Koma bombifrons*

(Karsch, 1890)

*Platypleura bombifrons* Karsch, 1890

**Appearance:** The distinctive colouring of its narrow forewings make *Koma bombifrons* easy to identify. Wingspan: 60–65 mm (n = 40). Type: MfN.

**Field notes:** This cicada enters southern Africa from the north, where it has a wide distribution. It appears to be more common in tropical East Africa and is distributed south along the eastern side of Zimbabwe, penetrating South Africa into the Venda District of the Limpopo Province, and further east into Mozambique. Three other related *Koma* species are found in East African forests. It appears to favour hilltop habitats and higher altitudes. Host plant: *Strychnos spinosa*.

## Genus *Kongota* Distant, 1904

- Head not produced, deflected in front of eyes.
- Costal membrane of forewings prominently arched at base, dilated, about as wide as or wider than costal area.

# *Kongota punctigera*

(Walker, 1850)

*Platypleura punctigera* Walker, 1850
*Platypleura subfolia* Walker, 1850
*Kongota muiri* Distant, 1905

♂

♀

**Appearance:** The images here show a typical male with a dark-winged female. Males appear to be standard in appearance, whereas the polymorphic females intergrade between the colour of the male and the dark-winged specimen shown. Wingspan: 55–57 mm (n = 25). Type: BMNH.

**Field notes:** Both female colour forms can emerge at the same time of the year from the same habitat. The majority of those taken during a week in the coastal Dweza Nature Reserve in the Eastern Cape in 2003 were of the dark-winged variety. They were common in the trees and their exuviae were found everywhere, on grasses, the bases of trees and even on the tyres of our motor vehicle.

## Genus *Munza* Distant, 1904

- Head not frontally produced, truncate, deflected in front of eyes.
- Outer and posterior margins of wings very broad.
- Tegmina with basal cell broadened apically.

# *Munza basimacula*

(Walker, 1850)

*Platypleura basimacula* Walker, 1850
*Platypleura reducta* Walker, 1850
*Munza pygmaea* Jacobi, 1910
*Platypleura sikumba* Ashton, 1914
*Munza parva* Villet, 1989

**Appearance:** The smallest of the *Munza* genus, *M. basimacula* is a medium-sized cicada. Wingspan: 40–45 mm (n = 23). Type: BMNH.

**Field notes:** This cicada has a wide distribution across the summer-rainfall area of the central bushveld, continuing northwards into Zimbabwe, northern Namibia and Angola, and east into Mozambique. It calls in colonies from various shrubs and trees. Three or four were singing from the top of a very tall aloe during a visit to Mpumalanga in December 2002. Host plants: *Lannea discolor* and probably others.

# *Munza furva*

(Distant, 1897)

*Poecilopsaltria furva* Distant, 1897
*Munza oculata* Jacobi, 1910

**Appearance:** A large species; the prominent white spot on the hindwings distinguishes it from *Munza laticlavia*. Wingspan: about 70–75 mm (n = 24). Type: BMNH.

**Field notes:** This species emerges in large numbers after summer rains have set in. It is gregarious in thicker vegetation and tends to favour *Vachellia* and *Senegalia* thorntrees. They have been found in Mpumulanga in the same area as a *Platypleura* species and close to a colony of *Pycna sylvia*. The species is found in Mpumalanga, Gauteng, Limpopo and North West Provinces, and it extends north into Zimbabwe where I have seen specimens from the Matopos and west of Masvingo. This species overlaps its range with *M. laticlavia* at Bulawayo in Zimbabwe. They fly from October to around the end of December.

# *Munza laticlavia*

(Stål, 1858)

*Platypleura laticlavia* Stål, 1858
*Platypleura penicillata* Walker, 1858
*Poecilopsaltria peringueyi* Distant, 1892
*Munza laticlavia* var. *lubberti* Schumacher, 1913
*Munza laticlavia* var. *semitransparens* Schumacher, 1913

**Appearance:** Some specimens collected later in the year develope a golden flush on the hindwings, but the conspicuous white marks at the margin of the hindwings easily serve to distinguish this species from others. This white marginal marking is quite variable and can differ in size and extent. Schumacher (1913) listed two extreme variations of *M. laticlavia* as var. *lubberti* and var. *semitransparens*. Wingspan: 70–75 mm (n = 30). Type: NHRS.

**Field notes:** *Munza laticlavia* inhabits the dry Northern Cape extending into Namibia, where they are common around Olifantshoek and Kuruman. It occurs in the same area as *Munza trimeni* but prefers the protection of thorntrees (*Vachellia* and *Senegalia* species), often singing loudly from deep inside the tree where it enjoys maximum protection. It is associated with a number of thorntrees, such as *Senegalia mellifera* and *Vachellia hebeclada*, however, it is suspected that it does not have a dedicated host plant. H. Staude (Magaliesburg) took a specimen similar to Schumacher's var. *lubberti*, which were plentiful in very dry conditions in Namibia on *Euphorbia gariepina*, and noted that they were absent from the one or two thorntrees nearby. They fly in December and January. Host plants: *Senegalia mellifera*, *Vachellia hebeclada*, *Euphorbia gariepina*.

# *Munza otjosonduensis*

Schumacher, 1913

**Appearance:** The very wide margin in the hindwings is typical of *Munza* species. Wingspan 45 mm (n = 5). Type: MfN.

**Field notes:** This almost unknown cicada was captured, as its name suggests, in the vicinity of Otjosondu, northwest of Windhoek, Namibia. It has been seen (RDS 2014) inside the Etosha National Park, calling from low, shrubby thorntrees on the side of the road in December 2014, after the arrival of rain. Its flight period is October to December, possibly dependent on rainfall.

# *Munza pallescens*

Schumacher, 1913

**Appearance:** This species' pretty wing markings seem to be fairly consistent, unlike with *M. laticlavia*, with which it flies in several localities. However, specimens with the hindwings almost all white have been collected. Wingspan: ± 60 mm (n = 25). Type: MfN.

**Field notes:** This medium-sized *Munza* has been found west of Olifantshoek in the Northern Cape and specimens have been collected northwards up to the Kgalagadi Transfrontier Park and west into the lower riverbeds of the Richtersveld where it occurs sympatrically with *M. trimeni*. Three specimens from Sewe Rivieren dated 1958 are in the National Ditsong Museum of Natural History collection. Its range probably extends far into Namibia. It has a preference for *Vachellia haematoxylon* (previously *Acacia haematoxylon*) a small shrubby tree with light grey-green leaves (which may be a host plant) and also *Senegalia mellifera* (previously *Acacia mellifera*), although males will call from other perches, including wire fences. Its range may well coincide with that of *Vachellia haematoxylon*. It flies in December and January.

# *Munza trimeni*

(Distant, 1892)

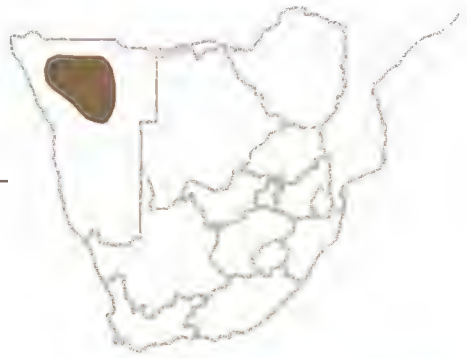
*Poecilopsaltria trimeni* (Distant, 1892)

**Appearance:** This species resembles *Munza laticlavia* superficially, with which it shares a similar hindwing, but its forewings are closer in appearance to *M. pallescens*; and it is generally a larger insect. Wingspan: 75–79 mm (n = 10). Type: BMNH.

**Field notes:** There has for some time been uncertainty about the positive identification of this cicada among the variable forms of *Munza laticlavia*, with which it occurs sympatrically in many localities. It has now been established that the description by Distant refers to a species close to *M. laticlavia*, with prominent gold-orange streaks on the wings. *Munza laticlavia* also produces similar-looking specimens, usually later in the season, with streaks on the wings. Specimens of *M. trimeni* have been collected (with difficulty!) from thorntrees growing along dry riverbeds near Pofadder. It has been collected along the dry riverbeds of the Richtersveld. This cicada occurs from east of Upington, westwards to Steinkopf and further north. Its full range is not known.

# *Munza venusta*

Hesse, 1925



**Appearance:** *Munza venusta* has less pigment in its forewings and the hindwings are pale compared to other *Munza* species. It has a slightly soiled appearance. Wingspan: 39–44 mm (n = 6). Type: SAMC.

**Field notes:** Hesse described this cicada from a male specimen found at Tsumeb in Damaraland in northern Namibia, however, no further reference was made to its habitat. A single specimen was seen in 2014 in Etosha National Park on a thorntree. It flies from September to April. Specimens collected by Ficq are in the collection of Dr Jonathan Ball.

## Genus *Oxypleura* Amyot & Audinet-Serville, 1843

- Width of head, including eyes, about equal to that of pronotum.
- Pronotum prominently produced into angular paranota.

# *Oxypleura lenihani*

Boulard, 1985

**Appearance:** A robust cicada with hyaline wings and pointed paranota. The costal margins area is fulvous in colour. Wingspan 82–85 mm (n = 30). Type: MNHP.

**Field notes:** This robust cicada is found fairly commonly in the forests of KwaZulu-Natal and its range extends through tropical and coastal forests into East Africa all the way to Malawi, where it is replaced by *Oxypleura polydorus* (Walker, 1850) which is morphologically similar. It has a flight period from December to April. Host plant: *Ficus* spp.

# *Oxypleura quadraticollis*
(Butler, 1874)

*Platypleura quadraticollis* Butler, 1874

**Appearance:** Large cicada with lateral edges of pronotum extended to sharp points. Wingspan: 85–90 mm (n = 30). Type: BMNH.

**Field notes:** Commonly found in the bushveld of Mpumalanga and Limpopo Provinces, ranging northwards into Zimbabwe, Botswana and Namibia. It is plentiful along the Zambezi Valley and in the Caprivi and further west along the Cunene River. Hundreds of adults have been seen swarming around lights of a petrol station near the Zambian border. Huge swarms were also encountered in the mopani woodlands of Kruger National Park in December 2008 (Peter Webb, pers. comm.). One of the writer's first cicada encounters was finding adult *Oxypleura quadraticollis* drowned in hot spring pools at Tshipise, Limpopo Province, where they were attracted by the lights of the resort. Host plant: *Colophospermum mopane.*

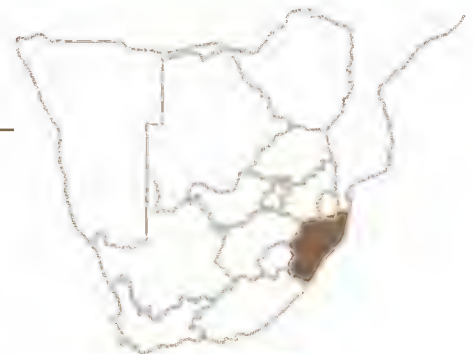
## Genus *Platypleura* Amyot & Audinet-Serville, 1843

The genus *Platypleura* is well represented and widespread in Africa with nearly 40 species. The genus'range extends east into Asia, with representatives as far afield as China and Japan (Distant 1906). One species inhabits Madagascar (Distant 1905). South Africa has 17 named species, and there are additional unnamed species awaiting description. Molecular studies are presently being undertaken on *Platypleura* and related cicada genera at Rhodes University, Makhanda. Villet (1989b) transferred four species of *Platypleura* to the monotypic genera *Albanycada*, *Azanicada*, *Systophlochius* and *Capcicada*. However, *Systophlochius palochius* Villet, 1989, has since become a junior subjective synonym of *Platypleura techowi* Schumacher, 1913; and *Azanicada zuluensis* is likely to, after DNA analysis, revert back to *Platypleura*.

- Head truncate, deflected in front of eyes.
- Margins to wings narrow.

# *Platypleura argentata*

Villet, 1987

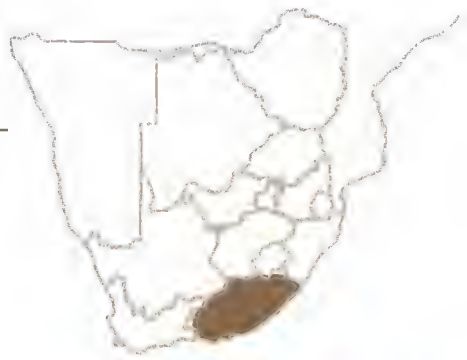


**Appearance:** Unlike closely related *Platypleaura divisa*, its opercula do not overlap. Argentatus means 'silver-covered' and probably refers to the appearance of the forewings. Wingspan: 62 mm (n = 4). Type: TMSA.

**Field notes:** This is a species that inhabits the coastal region of KwaZulu-Natal, extending its range as far south as the Eastern Cape. It occurs in patches of coastal milkwood forest where it favours mature *Mimusops caffra* trees as host and is therefore often restricted to the deeper parts of the forest. It appears to be a localised species and is seldom seen in collections.

# *Platypleura brunea*

Villet, 1989



**Appearance:** This species is closely related to *Platypleura chalybaea*, but is easily distinguished by the brownness of its tegmina. It also possesses a distinctive encounter call and is not as gregarious. Wingspan: 55–60 mm (n = 12). Type: holotype male in SANC; paratypes in TMSA, AMGT.

**Field notes:** It was discovered on willow trees along a stream in Queenstown in the Eastern Cape. The species can also be found at Stutterheim and must inhabit other localities in the area, but in the meantime, until more is known about this cicada and its habitat, it must be considered a localised species. Some specimens collected in the Kruger National Park and stored in their insect collection have been tentitively labeled *Platypleaura brunea*. DNA studies may prove that this cicada has a wider distribution than recorded at present. Host plant: *Salix babylonica*.

# *Platypleura capensis*

(Linnaeus, 1764)

*Cicada capensis* Linnaeus, 1764

**Appearance:** Closely resembles *Platypleura stridula* and was, for many years, considered a form of it; however, it is a smaller insect and its hindwings display more hyaline spots in the apical areas. Wingspan: 54–57 mm (n = 25). Type: UUZM.

**Field notes:** *Platypleura capensis* is found in the Western Cape where it is gregarious in various indigenous daisy shrubs. At Port Elizabeth it favours *Osteospermum moniliferum* and its range extends further east to the limits of the fynbos vegetation. It seems to favour the mountain slopes of the Cape Peninsula, some areas of which are now a proclaimed wilderness area. The adult is active in December and January, which must make it vulnerable to the regular mountain fires that sweep the Cape Peninsula stimulated by the brisk southeasterly wind that prevails at that time of the year. Host plants: *Metalasia muricata*, *Brachylaena discolor*, *Osteospermum moniliferum*.

# *Platypleura catenata*

(Drury, 1773)

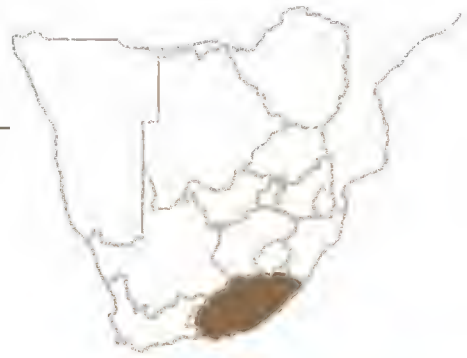
Cicada catenata Drury, 1773

**Appearance:** This cicada forms part of a group of closely related *Platypleura* species (*P. capensis*, *P. stridula* and *P. 10* (Villet 1989b) in the Western Cape, each one occupying a different habitat niche and all appearing superficially similar; it is not recognised by some experts as a separate species. Sanborn (2014) lists it as a synonym under *Platypleura stridula*. However, my series of specimens is constant in appearance, with their broad dark border to the hindwing and the species is upheld for the present. Wingspan: 56 mm (n = 9). Type: unable to locate.

**Field notes:** This cicada predominantly inhabits the Western Cape and specimens have been collected at the Swartberg, Seweweekspoort and the northern side of the Langeberg, west through to the Steenbras Dam. Host plants: unknown.

# *Platypleura chalybaea*

Villet, 1989



**Appearance:** Diagnostic characters include the variegated forewing, the lack of a thoracic midline and the dark border to the hindwing which is much reduced. Wingspan: 29–32 mm (n = 9). Type: holotype in SANC; paratypes in AMGT and SANC.

**Field notes:** This cicada occurs in the Albany District in the Eastern Cape where it enjoys a unique habitat. They are usually found on *Euphorbia* trees, often several insects are seen on a single tree. It has a patchy distribution and is localised on rocky hillsides where its host tree grows. Host plant: *Euphorbia triangularis*.

# *Platypleura deusta*

(Thunberg, 1822)

*Tettigonia deusta* Thunberg, 1822

**Appearance:** The variegated forewings, with two orbicular spots, a prominent midline often divided into two, and a dark border to the hindwings are characteristic of *Platypleura deusta.* Wingspan: 55–70 mm (n = 17). Type: UUZM.

**Field notes:** *Platypleura deusta* occurs in a mixed range of habitats. Specimens examined come from the lush Kubusie Forest near Stutterheim, Eastern Cape, from where it occurs to the west of Cradock; also along the green slopes of the Drakensberg through KwaZulu-Natal into Eswatini, and into the Free State between Harrismith and Clarens, where it frequents the woody shrub *Leucosidea sericea.* In Lesotho they were present in shrubs along a river and on a steep slope below the Moteng Pass. They did not appear, as far as I could tell, above the snow-line or on the higher mountain passes. Host plants: *Leucosidea sericea, Cliffortia* spp.

Typical habitat of *Platypleura deusta* in the Drakensberg uplands in the Free State with *Leucosidea sericea* (foreground) and *Cliffortia* spp. growing along drainage lines. Photograph: M.H. Villet.

# *Platypleura divisa*

(Germar, 1834)

*Cicada divisa* Germar, 1834
*Platypleura chloronota* Walker, 1850

**Appearance:** *Platypleura divisa* is closely related to *P. maytenophila* (Villet 1987a) with both lacking hyaline patches in the forewing; *P. divisa* has green thoracic markings whereas *P. maytenophila* has brown thoracic markings and its opercula overlap. Their calls are distinctly different. Wingspan: 63–65 mm (n = 20). Type: MfN.

**Field notes:** This species is widespread in South Africa. It occurs in the eastern half of South Africa in habitats ranging from grassland to sparse clumps of bushes to thicket. Males form choruses on *Maytenus heterophylla*. The adult is active from November to March.

# *Platypleura haglundi*

Stål, 1866

**Appearance:** This smaller species shows marked geographic variation in colouration and wing pattern. Specimens from Zululand are greenish and mottled; those from the KwaZulu-Natal Midlands usually browner and mottled; North West Province specimens are sometimes almost black; Zimbabwean specimens are darker and more uniformly brown. Wingspan: 47–50 mm (n = 20). Type: NHRS.

**Field notes:** *Platypleura haglundi* is an inhabitant of thorntree bushveld and is widespread across the northern part of the country. Zimbabwe specimens can emerge as early as October, those from further south emerge from November to March. Host plants: *Delonix regia*, *Vachellia karroo*, other thorntree spp. (*Vachellia* and *Senegalia* spp.), *Dichrostachys cinerea.*

# *Platypleura hirta*

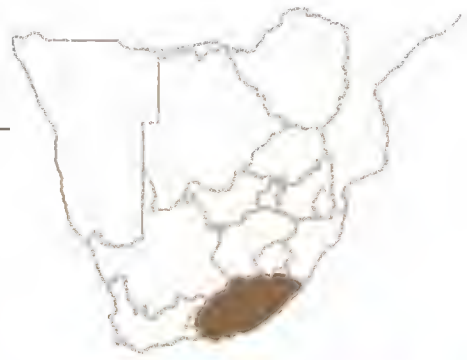
Karsch, 1890

**Appearance:** Specimens in collections change colour after a few years with markings on the head, thorax and the proximal costal margin turning from predominantly black to a dull red, and the forewings fading to a dull buff. Wingspan ± 70 mm (n = 29). Type: MfN.

**Field notes:** This cicada occurs in the bushveld of the summer-rainfall area, where it is found across Mpumulanga, Limpopo and Gauteng, at least as far west as Pretoria. Cicadas form colonies on *Protea roupelliae*, a somewhat common, small tree on rocky slopes, and on *Faurea saligna*.

# *Platypleura hirtipennis*

(Germar, 1834)



*Cicada hirtipennis* Germar, 1834
*Platypleura ocellata* Walker, 1850 [*nec* Degeer]
*Platypleura divisa* var. *b* Stål, 1866

**Appearance:** Body brown to greenish, forewings distinctly variegated, a dark margin to the jugum sometimes feint; circumcaudal tomentum on the eighth tergite white, narrowly divided. Wingspan: 64–67 mm (n = 10). Type: lectotype male in MfN.

**Field notes:** *Platypleura hirtipennis* can be found in thorntree (*Vachellia* and *Senegalia* spp.) bushveld within 100 km of the Eastern Cape coast. They do not form close colonies like *P. divisa* and are usually found one to a tree. They seem to prefer calling from the middle of the tree where they are well protected by the thorns. Host plant: *Vachellia karroo.*

# *Platypleura karooensis*

(see Price et al. 2010 – awaiting formal publication)

**Appearance:** Species description awaiting publication. This cicada was, until recently, considered to be a geographical variation of *Platypleura plumosa*. DNA sequencing showed it to be a distinct species. Wingspan: 65 mm (n = 10).

**Field notes:** Specimens were collected from Prince Albert, Beaufort West, Laingsburg, Robertson and the Swartberg in the Aardvark Nature Reserve at the foot of the Little Swartberg. It seems to be more prevalent north of the Swartberg range.

# *Platypleura* cf. *longirostris*

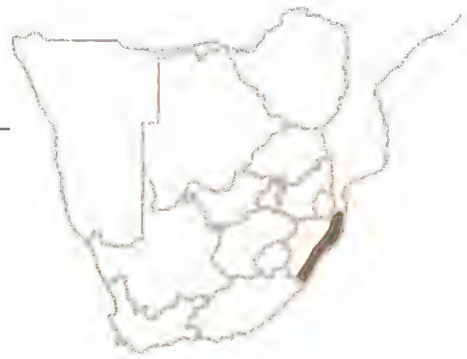
Ashton, 1914

**Appearance:** The rostrum reaches the third or fourth sternite, head brown, mesonotum black, forewing with herringbone pattern along the discal vein, white circumcaudal tomentum divided on the eighth tergite. Wingspan: 65–72 mm (n = 12). Type: Australian Museum, Sydney.

**Field notes:** Ashton (1914) described *Platypleura longirostris* from Uganda and its description seems to agree with this common and widespread species that occurs in the eastern half of South Africa. Lack of specimens from Tanzania and Mozambique means that a continuous range from East Africa to the south cannot be confirmed. This cicada is common along the Zululand coast, occurring further south into the former Transkei Region, where groups frequently congregate on tree trunks or form colonies in milkwood forests. They were conspicuous on the trunk of a large tree with a light grey bark in the parking lot of Dukuduku Forest. Further north at Manguzi, a male was so well camouflaged on a darker tree trunk that, even though it was calling loudly, it could not be spotted from a metre away. One warm summer night at Sodwana Bay they were attracted to the soft light of a paraffin lamp, crashing and lying upside-down on the table, buzzing furiously like little clockwork toys. *Platypleura* cf. *longirostris* favours coastal bush from the Eastern Cape through KwaZulu-Natal and inland to the Soutpansberg. It is moderately gregarious, settling on tree trunks or in thickets in groups of up to a dozen or more.

# *Platypleura maytenophila*

Villet, 1987



**Appearance:** Head and thorax greenish; legs pale green, veins in the forewings green. Wingspan 28–31 mm (n = 18). Type: holotype male at TMSA; paratypes at TMSA, SANC, NMSA, BMNH.

**Field notes:** This species is a resident of the KwaZulu-Natal coastal region, and is found in milkwood (*Mimusops caffra*) forest, coastal dune scrub and mixed bush where its host plant occurs. It flies from December into February. Host plant: *Maytenus heterophylla.*

# *Platypleura mijberghi*

Villet, 1989

**Appearance:** Robust; sooty greyness of the forewing markings and the body distinguish this species from all others in the area. Wingspan: 70–73 mm (n = 25). Type: SANC.

**Field notes:** This species is fairly common in Gauteng and I also have specimens from the Vredefort Dome area of the Free State and Eswatini. It appears throughout the summer-rainfall area of the bushveld, and often invades domestic gardens in the region. It does not seem to be fussy about the trees that they congregate on, often selecting alien invasive species like willows or eucalypts, besides indigenous *Searsia* and *Cussonia* species. Occasionally small numbers of them are observed on a karee tree (*Searsia lancea*), however, when people are about, they turn down the volume of their song to a soft, high-pitched whine, which seems to be a compromise between the needs for both concealment and communication. On the bark of burnt tree trunk their dark colouring renders them almost invisible and they avoid the smooth bark of light-stemmed trees, e.g. white stinkwood (*Celtis africana*), where they would be conspicuous.

*Platypleura mijberghi* is inconspicuous on a karee tree in Wierda Park, Centurion. Photograph: A.P. Marais.

# *Platypleura murchisoni*

Distant, 1905

♀

**Appearance:** Head and thorax brownish without a midline, forewing apical areas greyish, semi-opaque. Wingspan: 66 mm (n = 15). Type: BMNH.

**Field notes:** A shy species, named after the Murchison Mountain Range in Mpumalanga near Gravelotte. Males were observed calling from high coral trees (*Erythrina* spp.) near Steelpoort in Mpumulanga, but could not be attracted to ultraviolet lights. Females of many Platypleurini appear to be more susceptible. During regular visits to the Dwars River in the Lydenburg District, at least one female always landed on the moth sheet, but never a male. It flies during November and January.

Typical habitat of *Platypleura murchisoni*. Photograph: M.H.Villet.

# *Platypleura plumosa*

(Germar, 1834)

*Cicada plumosa* Germar, 1834
*Platypleura hirtipennis* var. *b* Stål, 1866

**Appearance:** One of only three species of *Platypleura* with a dark border to the jugum; forewings poorly variegated, if at all. Wingspan: ± 62–66 mm (n = 15) with the Karoo specimens slightly larger, their wingspan 69 mm (n = 6). Type: lectotype male at MfN.

**Field notes:** Occurs in the Eastern Cape and usually found on *Vachellia karroo*. Specimens from further inland and from the Western Cape, which display a broad, black margin to the wings (similar to *Capcicada decora*) are being examined to establish whether they are conspecific. Specimens collected from Laingsburg, Calitzdorp and Robertson, considered to be a possible subspecies of *P. plumosa* are yet to be described (see *P.* '*karooensis*' Price et al., 2009). *Platypleura plumosa* has been found near Middelburg, Cradock, Pearston, Oudtshoorn and Calitzdorp. It flies from November to March. Host plant: *Vachellia karroo*, which is often the only indigenous tree in their area.

# *Platypleura* species 10

**Appearance:** Forewings greyish, hindwings with a broad border, dark midline on head and thorax. Wingspan: 66 mm (n = 10).

**Field notes:** In an investigation into the stridula group of cicadas in the Western Cape, this cicada from Nieuwoudtville at the top of the Vanrhyn's Pass, was found to differ significantly from all others. Awaiting final decision on its status, it is presently referred to as *Platypleura* sp. 10. It was found flying from *Metalasia* shrubs between tall eucalyptus trees on the outskirts of the town in December. We also have specimens from the top of the Pakhuis Pass and one from Citrusdal collected by the late F. Honiball.

# *Platypleura signifera*

Walker, 1850

**Appearance:** The mottled wing pattern on the forewings and the broad black border to the hindwings makes this attractive cicada easy to identify. The circumcaudal band on my two specimens is not divided laterally. The shape of the wings and body is more reminiscent of genus *Capcicada*. Wingspan: 54 mm (n = 2). Type: BMNH.

**Field notes:** This pretty cicada occurs in localised spots along the west coast of South Africa and inland in Namaqualand. It is rarely seen in collections. Records show that it has been found north of Port Nolloth and at a few localities further south. It has recently been collected at Groenriviersmond, close to the sea. Further inland, a small colony is known to exist near Nuwerus. It flies very fast between bushes and is so active on hot days that it is almost impossible to approach. It flies from December to January.

# *Platypleura stridula*

(Linnaeus, 1758)

*Cicada stridula* Linnaeus, 1758
*Cicada nigrolinea* Degeer, 1773
*Cicada catenata* Drury, 1773

**Appearance:** *Platypleaura stridula* is a larger insect than *P. capensis* and has fewer hyaline spots in the hindwings, if any; there is a prominent black midline that extends from the head to the cruciform elevation. Length of one wing: 29–32 mm (n = 24). Type: UUZM.

**Field notes:** This is one of the first cicadas ever named by Linnaeus and was selected as the type species for the genus *Platypleura* by Amyot and Seville in 1843. It resembles *P. capensis*, which was, for many years, treated as a variety of *P. stridula*. Among several differences between the two is its propensity for inhabiting exotic trees and shrubs, such as willow (*Salix* spp.) and the Australian Port Jackson willow (*Acacia cyclops*). Like *P. capensis*, it also inhabits the Western Cape and their range seems to overlap on the Peninsula. However, *P. stridula* penetrates into the Karoo and was noticed in tall reeds along a stream on the north side of the Langeberg near Seweweekspoort. It is generally a larger insect than *P. capensis*, has a different song and can be found in non-fynbos habitat. However, in 2017 it was seen always on its spikey-leafed host plants from the Gydo Pass through to Nieuwoudville. Host plants: *Metalasia muricata*, *Cliffortia* spp.

**Taxonomic notes***:* An investigation into individual *Platypleaura stridula* populations along the rivers of the Cape and the Orange River by Price et al. (2007) revealed subtle differences. After DNA sampling it was established that each river had its own species. These findings were published (Price et al. 2007) but the individual descriptions are not yet official. Manuscript names for these proposed new species are as follows: *P. breedeflumensis*, from the Breede River; *P. gamtoosflumensis*, from the Gamtoos River; *P. gariepflumensis*, from the Orange River (see *P.* cf. *transparens*); and *P. olifantflumensis*, from the Olifants River. Illustrations of these newly described species are not yet available, except for *P. transparens* (see species p. 68).

# *Platypleura techowi*

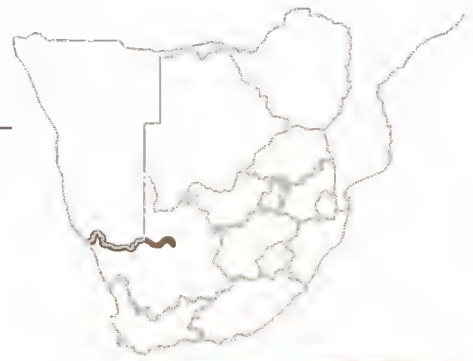
Schumacher, 1913

*Platypleura divisa* var. *techowi* Schumacher, 1913
*Systophlochius palochius* Villet, 1989

**Appearance:** It is one of the few southern African platypleurines with a black border to the anal cell; variegated forewings; midline reaching the pronotum; white circumcaudal band usually not divided. Wingspan: 60 mm (n = 16). Type: MfN.

**Field notes:** This species is found in the central parts of South Africa, and its range extends in the west far into Namibia, from where it was first described by Schumacher and occurs up to the Limpopo/Mpumalanga Escarpment and the Limpopo Valley. It was found quite commonly in the vicinity of Barclay West on the Vaal River, always on acacia, but usually not more than two to a tree. A pair found their way to dim caravan lights after a brief dusk chorus. It flies from November to February. Host plants: *Vachellia karroo*, other thorntree species and *Cassia* sp.

# *Platypleura* cf. *transparens*



**Appearance:** This large cicada with unusual hyaline wings cannot be confused with any other *Platypleura*. Colonies enjoy loud dawn and dusk choruses. Wingspan: 75–80 mm. (n = 11). Type: still undescribed.

**Field notes:** Paradoxically, this cicada is most closely related to *Platypleura hirtipennis*. It is found along the Orange River and has been seen at Vioolsdrift and other localities eastwards at Augrabies and Upington, reaching as far east as Aliwal North. Years ago, a photograph of this insect was sent to Prof. Michel Boulard in Paris. He recognised it as a new species and suggested the manuscript name, *P. transparens*. As no published description has appeared, it is treated here as undescribed. Recent DNA studies place it in a group with *P. plumosa*. A search for specimens near the Augrabies National Park in December 2005 concentrated on finding adults in the thickets of Cape willow trees (*Salix mucronata*) which grew thickly along the banks of the river. Their smooth, light grey stems seemed to be compatable with the transparent wings of this unusual *Platypleura*. Only one was seen, calling loudly at dusk, although campers under the Cape willow trees also mentioned being woken at dawn by a loud chorus. They did not come to UV light, but are attracted to the softer lights of houses. They are more common at Vioolsdrift along the Orange River in mid-January. Host plants: *Vachellia karroo, Salix babylonica*.

The Cape willow (*Salix mucronata*), which grows in thickets along the Orange River above the Augrabies Falls, is presumed to be a host plant of this *Platypleura*. Photograph: R.D. Stephen.

# *Platypleura turneri*

Boulard, 1975

Specimen at BMNH. Photograph: R.D. Stephen.

**Appearance:** Strongly variegated wings; prominent midline; hindwings with a dark border to the anal lobe. Length of one wing: 32 mm, wingspan 77 mm. Type: BMNH.

**Field notes:** Boulard described this large platypleurine cicada from a single specimen collected in the mountains of Ceres in the Western Cape at an altitude of 1 500 ft (457 m). It was first considered to be a hybrid, possibly between *Platypleura stridula* and *P. plumosa*. It has some characteristics of both, the forewings superficially resemble *P. stridula* and the wings having a dark border to the anal lobe, often present in specimens of *P. plumosa*. It has apparently been rediscovered in the high mountains of the Matroosberg.

# *Platypleura wahlbergi*

Stål, 1855

**Appearance:** Brown rounded forewings and a distinctly marked hindwing serve to identify this cicada. Wingspan: 45 mm (n = 6). Type: NHRS.

**Field notes:** This pretty little cicada is an inhabitant of the Eastern Cape, where it appears to prefer a coastal aspect. Its range extends into KwaZulu-Natal. It is regularly found in small colonies on tall grass in openings in thick bush at Bosbokstrand near Haga Haga. It flies in November and December. Host plants: *Vachellia karroo*, *Berkheya* sp.

## Genus *Pycna* Amyot & Audinet-Serville, 1843

- Head, including eyes, only a little more than two-thirds the width of the mesonotum.
- Pronotal lateral margins ampliated, rounded, apices not or only just reaching the basal cell of the tegmina.
- Costal margin of forewings prominently arched at base and dilated.
- Costal membrane of forewings always as broad as or broader than costal area.
- Ulnar veins widely separated at their bases.
- Rostrum reaching posterior coxae.
- Frons not indented above clypeus.

# *Pycna natalensis*

Distant, 1905

**Appearance:** A large cicada, which can be easily separated from *Pycna sylvia* by means of its green costal margins. Wingspan: 88–92 mm (n = 11). Type: Stockholm NHRS Museum.

**Field notes:** This species looks much like *Pycna sylvia*, occurs in the subtropical regions of KwaZulu-Natal and Mpumulanga, and does not appear to enjoy the bushveld altitude of its sibling. It is also found on the Lebombo Mountains along the eastern border of Eswatini and may well extend its range into southern Mozambique. It is not as widespread as *P. semiclara* and appears to be localised.

# *Pycna neavei*

Distant, 1912

**Appearance:** Wingspan: 65 mm in Zimbabwe, but apparently much larger further north. Distant (1913) recorded a wingspan of 81 mm for a male and 87 mm for a female, both from Malawi, which agrees with a single specimen we have from there – a male with wingspan measuring 84 mm. Type: BMNH.

**Field notes:** *Pycna neavei* occurs in the forests of the Vumba Mountains in eastern Zimbabwe and on the hills around the town of Mutare. It is also recorded from Livingstone in Zambia. Zimbabwe specimens were all collected in March. This cicada was named after S.A. Neave of the British Museum of Natural History.

*Pycna neavei* is found in the *Brachystegia* woodlands on the hills above Mutare in Zimbabwe. Photographer: A.P. Marais.

# *Pycna semiclara*

(Germar, 1834)

*Cicada semiclara* Germar, 1834
*Platypleura basifolis* Walker, 1850

**Appearance:** A large, endemic *Pycna* species with mottled green forewings. Wingspan: 80–85 mm (n = 30). Type: MfN.

**Field notes:** A common species in its favourite haunts where they form large colonies. They occur from the Eastern Cape northwards into Limpopo and the Soutpansberg and is also found near Van Reenen. The Eastern Cape seems to be most favoured where they have been observed in the Alexandria Forest in very large numbers in December. At the Somerset East caravan park I was awakened by a dawn chorus like a thousand alarm clocks, and that evening, having forgotten to close a window, returned to find my caravan alive with a swirling mass of *Pycna semiclara* attracted to the dim light inside. Almost all of them were females. They are capable of a heart-rending distress cry when attacked by birds or when handled. They inhabit forest and thick riverine bush but have also been observed in numbers on an exotic tree (*Salix* sp.) at a distance from any stream in the Haenertsburg area. Their distribution overlap with *P. sylvia* near Roossenekal. Their hosts include oaks (*Quercus robur*), cottonwoods (*Populus canescens*), pines (*Pinus* spp.), and many large-trunked indigenous forest species including *Barringtonia racemosa* and *Hibiscus tiliaceus*.

# *Pycna sylvia*
(Distant, 1899)

*Platypleura sylvia* Distant, 1899

**Appearance:** This large cicada, our largest endemic cicada, has no black markings on the lateral side of the head and pronotum. It inhabits a very localised area west of Lydenburg. Wingspan: 90–95 mm (n = 15). Type: BMNH.

**Field notes:** The late Rudi Mijburgh first mentioned to me that this cicada had not been seen for nearly a century. Three specimens in the Transvaal Museum (now Ditsong Museum) collection dated 1904 gave the locality as 'Lydenburg District'. In 1997 various areas around Lydenburg were explored without success and I approached nature conservation officials to discuss registering a project with them to search for it. Early maps were studied and some promising localities were explored, but without success. Then, in November 2002, during an ecological survey in the Dwars River Valley, about 60 km west of Lydenburg, some large cicadas were captured during a random collecting survey by Transvaal Museum members and brought to me for identification. They proved to be the same as the three in the museum collection and were verified by M.H. Villet. Later I came across a specimen awaiting identification in the National Collection of Insects in Pretoria (SANC) dated 1989 from the same district, and spotted two more in Jonathan Ball's collection of cicadas collected from the top of the Watervalrivier Pass, which is even closer to Lydenburg. Funding from Anglo Platinum and Northam Platinum (Anglo American Platinum and Northam Platinum Ltd.) was generously allocated towards determining whether *Pycna sylvia*, our largest endemic cicada, was potentially threatened by their future mining activities, and studies were started in the Dwars River's valleys to determine their population size and habitat. *Pycna sylvia* was found in two linked localities:

along the road between Stoffberg and Burgersfort, and at Roossenekal. However, its home is centered in the Dwarsrivier and Klein Dwarsrivier Valleys in Mpumalanga. The insect is closely associated with the tree *Vitex obovata* subsp. *wilmsii*. Statistical records and observations confirm a preference for these trees. A female has been photographed depositing eggs in dry *Vitex* stems, drilling holes with her ovipositor about 150 mm apart into a soft, almost hollow, dead twig, and laying about 12 translucent, sausage-shaped eggs into each of the holes. The holes were left unsealed. The eggs are tiny, out of proportion with the size of the adult – a dissected female contained about 200 eggs. Unfortunately, they did not hatch. However, in 2012 a nymph was observed hatching from under a shrub (*Argyrolobium* sp.) growing along a level alluvial area. Numbers of nymphs of differing instars were found at the base of the roots of these shrubs. After hatching, nymphs fall to the ground and disappear underground where they lead a solitary life, feeding on sap from smaller roots of their host plant. From variously sized recovered nymphs, it is assumed that they remain in that state for six to seven years. Nearing eclosion of the adult, they emerge from underground after rain and climb up and cling to a nearby vertical twig or grass stem. After splitting their skin dorsally, they emerge to expand their wings. The shells, called exuviae, are easily found on grass stems or on the trunk of a convenient tree. Emergence holes can usually be found close by under trees and shrubs. There is no excavated material around these holes. Upon emergence, adults are soft and helpless. Their wings take a while to harden before they can fly off to safety. Most emerge at night and after rain when the conditions are favourable. It is gratifying to know that this, our largest South African species, is not extinct as feared, but survives in several localities in the Lydenburg District. Efforts will be made to look for it further afield. It flies from about the second week in November into January. Host plants: *Vitex obovata* subsp. *wilmsii*, *Argyrolobium* sp.

Top: *Pycna sylvia* adult. Photographer: A.P. Marais.
Bottom: Vanessa Stephen mapping and recording specimens of *Pycna sylvia* on a *Vitex obovata* subsp. *wilmsii* tree. Photographer: R.D. Stephen.

## Genus *Severiana* Boulard, 1973

- Lacks hyaline areas in apical cell of hindwing.
- Paranotal lobes pointed.
- Relatively wide head.
- Extensively patterned wings.

# *Severiana magna*

Villet, 1999

**Appearance:** It has distinctively patterned forewings and a fulvous coloured pronotal collar. Wingspan: 76–80 mm (n = 3). Type: holotype at NMNW.

**Field notes:** This handsome cicada with its patterned forewings is a resident of Namibia. It has been observed in mopani woodland in the north, and on *Protea* trees to the southwest of Windhoek on the Kupferberg Pass. Males form choruses of up to ten insects which sing for approximately two minutes at a time (H.C. Ficq, pers. obs.). It flies from November to April.

# *Severiana severini*

(Distant, 1893)

*Poecilopsaltria severini* Distant, 1893
*Platypleura fenestrata* Schumacher, 1913
*Platypleura schumacheri* Metcalf, 1955

**Appearance:** A medium-sized cicada with a short lateral midline and pigmentation over the proximal half of the hindwings only. Wingspan: ± 55 mm (n = 30). Type: BMNH.

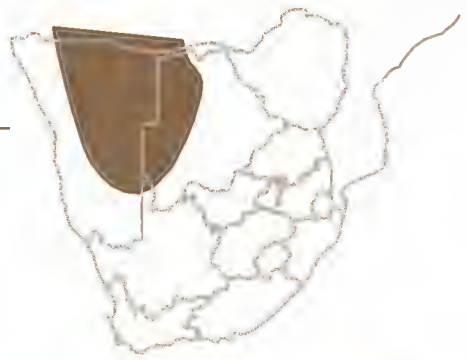
**Field notes:** This cicada occurs across most of the northern part of the subregion and, like various other species, enters our area from further north. Guy Marshall wrote that he found it in mopani woodlands in Zimbabwe and specimens have been collected from thorntree bushveld in Limpopo Province. It was very common in the dry woodlands of northeastern Botswana in 2002. It is on the wing from October to January. Host plant: *Colophospermum mopane.*

## Genus *Soudaniella* Boulard, 1973

- Head, including eyes, about as wide as base of mesonotum, truncate, not frontally produced.
- Rostrum reaching abdominal margin.
- Outer and posterior membranal margins to wings broad.

# *Soudaniella marshalli*

(Distant, 1897)



*Poecilopsaltria marshalli* Distant, 1897

**Appearance:** Its size and pattered wings make this cicada unlikely to be confused with any other species. Wingspan: 55–65 mm (n = 25). Type: BMNH.

**Field notes:** This cicada was found to be very common in Namibia, particularly in the north around Oshakati. In 1983 they were present in hundreds, calling from every conceivable perch, even openly on fences where they could easily be handpicked. They had emerged prior to the rains that usually trigger cicada emergence. In South Africa they prefer the drier western region of the bushveld and extend their range northwards into Zimbabwe, Botswana and Angola. They are on the wing from September to January.

## Genus *Tugelana* Distant, 1912

- Forewings more than twice as long as broad.
- Basal cell in the forewings longer than broad.
- Ulnar areas moderately elongate.
- First apical area long and narrow.
- Rostrum reaches posterior coxae.

# *Tugelana butleri*

Distant, 1912

*Platypleura maritzburgensis* Distant, 1913

**Appearance:** Brown forewings, head and thorax, with very few markings. Wingspan: 48 mm (n =1). Type: BMNH.

**Field notes:** Specimens of this cicada are rarely seen in collections. It is known from southern Mozambique where a few specimens have been taken on both sides of the border with KwaZulu-Natal. Specimens seem to inhabit tropical forests on the coastal plateau and along the Futi River, which flows northwards towards Maputo.

## Genus *Ugada* Distant, 1904

- Pronotal lateral margins strongly angulately produced, the angular apices reaching the middle or near apex of the basal cell of the tegmina.
- Costal membrane not prominently arched at base and only moderately dilated (Distant 1904).

# *Ugada inquinata*

(Distant, 1881)

**Appearance:** Head greenish; forewings variegated; hindwings black with a wide orange bar and two white marginal spots. Wingspan: 85–90 mm (n = 5). Type: BMNH.

**Field notes:** They were heard calling at the Gorongosa National Park campsite in Mozambique, a loud dusk chorus led to a thicket where this cicada congregated in some numbers. They continued calling into the dark, however, trying to obtain specimens with a torch and a small net was unsuccessful. An ultraviolet light left on all night failed to attract specimens, although other cicada species were present at the light the following morning. They are large insects and the genus includes some of the biggest cicadas in the Afrotropical region, mostly inhabiting tropical forests. *Ugada inquinata* is the only representative of this genus to inhabit our subregion.

# Part 2

## Notes on apical cells and species identification

One of the best indicators of sorting the different genera is the number of apical cells in the wings. This does not, however, lend itself to identification of the individual species. Therefore, inevitably, there are gaps in this publication. Perhaps this book will inspire someone to bring light to the present lack of information.

The number of cells in the apical areas of both wings are given below for the list of genera of smaller cicadas:

| Genus | Apical cells |
|---|---|
| *Zouga* | 8+6 |
| *Hennicotettix* | 8+6 |
| *Melampsalta* | 8+6 |
| *Taipinga* | 8+5 |
| *Gazuma* | 8+5/4 |
| *Mapondera* | 8+4 |
| *Calopsaltria* | 7+5 |
| *Psylotympana* | 6+6 |
| *Pauropsalta* | 5+5 |

# Subfamily Cicadettinae Buckton

The cicadas in subfamily Cicadettinae are characterised by the lack of tymbal covers in the male, leaving the tymbals completely exposed.

## Tribe Cicadettini Buckton, 1890

There are seven smaller, similar-looking species that are largely grassland cicadas. Often, there is confusion between the genera of some of these species. Some specimens we photographed in collections for this publication have been incorrectly identified. Many specimens had been put aside, unidentified, waiting for future classification.

### Genus Buyisa Distant, 1907

## *Buyisa umtatae*

Distant, 1907

**Appearance:** No specimens available for illustration. Type: BMNH.

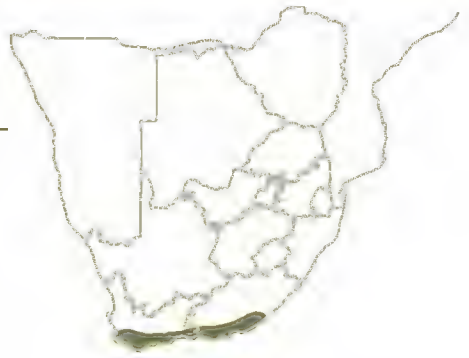
**Field notes:** I have never seen a specimen, but the type specimen, now in the British Museum of Natural History, was apparently collected in the Eastern Cape.

## Genus *Melampsalta* Kolenati, 1857

- Forewings with eight apical areas.
- Wings with five apical areas.
- Ulnar areas of the forewings about as long, or slightly shorter, than the apical areas.

# *Melampsalta cadisia*

(Walker, 1850)



*Cicada cadisia* Walker, 1850
*Cicada variegata* Olivier, 1790
*Cicada pellucida* Germar, 1830
*Cicada ruficollis* Stål, 1856 [*nec* Thunberg, 1822]

**Appearance:** A medium-sized, grass-loving cicada with hyaline wings; costal area ferruginous. Wingspan: 29 mm (n = 4). Type: BMNH.

**Field notes:** Walker's description only gives 'South Africa' as its location. However, it seems to occur in the inland coastal regions in the southern Western and Eastern Cape.

# *Melampsalta expansa*

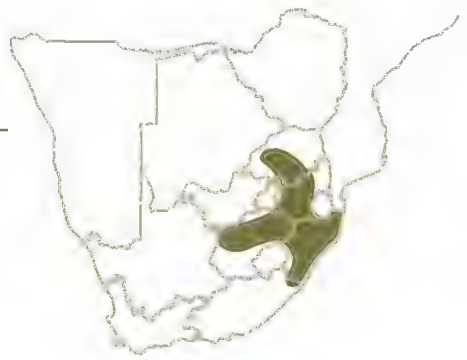
Haupt, 1918

**Appearance:** Unfortunately, only a soiled specimen available for illustration, but the shading on the forewings can be seen.

**Field notes:** *Melampsalta expansa* appears to be another grassland species.

# *Melampsalta leucoptera*

(Germar, 1830)



*Cicada leucoptera* Germar, 1830

**Appearance:** This little grass-loving cicada has smoky-grey forewings and hyaline hindwings. Wingspan: 36 mm (n =23). Type: Museum Berol.

**Field notes:** This cicada is fairly widespread in the highveld grasslands, particularly in the proximity of running water. They can be found in colonies sitting high up grass stems. Their call is a deep buzz which can carry a surprising distance. (I heard it driving past a colony). Other records indicate that they also occur in south and central KwaZulu-Natal, northern Eastern Cape and also much of the Free State.

# *Melampsalta limitata*

(Walker, 1852)

*Cicada limitata* Walker, 1852

**Appearance:** No specimens available for illustration. No information available. Type: BMNH.

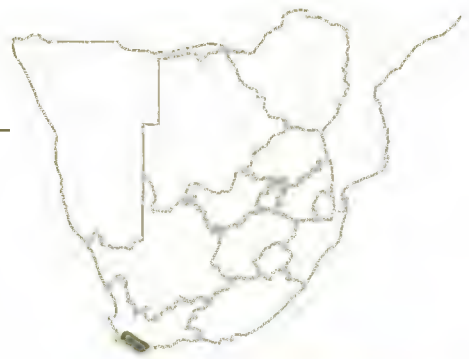
**Field notes:** No information available.

## Genus *Pinheya* Dlabola, 1963

- Forewings with eight apical areas.
- Hindwings with six apical areas.
- Highly developed nodal line in forewing.
- Ovipositor in female prolonged past the end of the abdomen.
- Basal cell in forewing longtitudinal.

# *Pinheya violacea*

(Linnaeus, 1758)



*Cicada violacea* Linnaeus, 1758
*Cicada hottentota* Olivier, 1790

**Appearance:** The shading in the wings of the few specimens that I have seen, is constant. Wingspan: 47–50 mm (n =3). Type: BMNH.

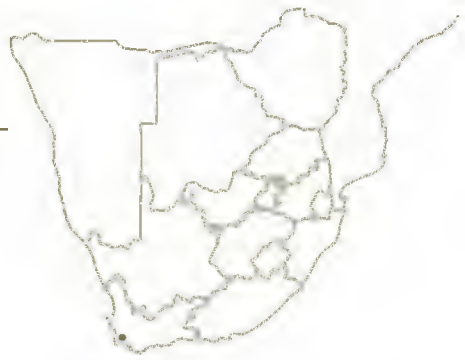
**Field notes:** *Pinheya violacea* is occasionally found in the Western Cape with records from Somerset West, above Lourensford and Paardeberg Hill. Distant mentions the Caledon River as a locality. It appears in January.

## Genus *Stellenboschia* Distant, 1920

- Forewings with eight apical areas.
- Wings with five apical areas – as in genus *Pauropsalta*, the wing possesses only five apical areas.
- The tegmina's radial area is, at its greatest breadth, about half as broad as long.

# *Stellenboschia rotundata*

(Distant, 1892)



*Melampsalta rotundata* Distant, 1892

**Appearance:** Angled forewings, head and body black. The very wide forewings of this little cicada make its identification rather easy. Wingspan: 31 mm (n =3). Type: BMNH.

**Field notes:** This little cicada has been found only in the Western Cape, appearing in spring and early summer.

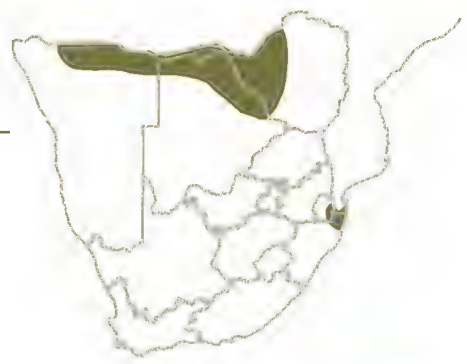
## Tribe Lamotialnini Boulard, 1976

### Genus *Monomatapa* Distant, 1879

- Forewings with eight apical areas.
- Wings with six apical areas.
- Front of head slightly longer than vertex, etc.
- Forewings with transverse vein at base of second apical area oblique and the basal cell longer than broad
- Breadth of forewings more than 1/3 of their length.

# *Monomatapa insignis*

Distant, 1897



**Appearance:** A large, robust, dark-bodied cicada; wings hyaline. Wingspan: 80 mm (n = 30). Type: BMNH.

**Field notes:** This cicada is widespread across the northern parts of southern Africa with specimens taken from Zambia, Malawi, Botswana and Namibia. A single specimen was seen at the Ndumo Game Reserve in KwaZulu-Natal, which suggests that it also finds its way south down the eastern side of southern Africa. In January 2014 it swarmed around Oshivelo on the eastern side of Etosha National Park and individuals hung like ripe plums from the trees. It is attracted to lights at night.

## Genus *Neomuda* Distant, 1920

The three species of *Neomuda*, together with the similar genera *Oudeboschia* and *Paranistria*, are all found in the Western Cape. Specimens of *Neomuda* frequently inhabit gardens in the Cape Peninsula and are often found drowned in swimming pools. During summer, they fly fast from trees, calling in short chirps while on the wing, often returning to their original perch. *Neomuda*, *Oudeboschia* and *Paranistria* may all turn out to be the same genus. According to Jonathan Ball (pers. comm., Cape Town) there are many other undescribed species of these cicadas in the Western Cape's mountain kloofs. This is a genus that needs a lot of work. More specimens need to be collected. The following three species were originally described in separate genera, but need to be re-evaluated and upgraded to *Neomuda*: *Neomuda festiva* (*Oudeboschia festiva* (Distant 1920)), *Neomuda villosa* (*Paranistria villosa* (Fabricius, 1781)) and *Neomuda trichosoma* (*Paranistria trichosoma* (Walker, 1850). *Oudeboschia* and *Paranistria* are still valid genera but need to be sunk. They are both believed to be conspecific with *Neomuda*.

- Forewings with eight apical areas.
- Hindwings with six apical areas.
- Anterior femora incrassate (thickened).
- Face globose.

# *Neomuda abdominalis*

Distant, 1920

**Appearance:** Veins in the forewings black, head and thorax with greenish tint, costal membrane greenish or ochraceous, body usually green. Wingspan: 57 mm (n = 6). Type: BMNH.

**Field notes:** Although a common species, inhabiting gardens and trees in the Cape Peninsula, it is not easily captured owing to its fast flight. At Kirstenbosch National Botanical Garden they have been observed flying high above visitors.

# *Neomuda peringueyi*

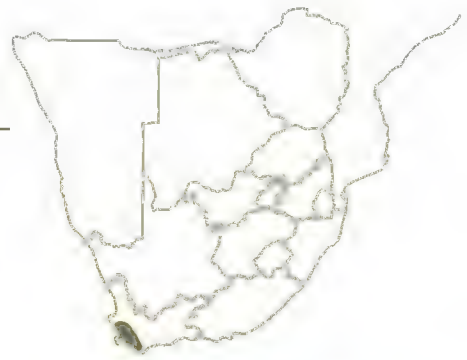
Distant, 1920

**Appearance:** Forewings and costal margins have a distinctive yellowish tint; abdomen with transverse stripes laterally. Wingspan: 56 mm (n = 4). Type: BMNH.

**Field notes:** No information available.

# *Neomuda trimeni*

Distant, 1920



**Appearance:** Wings unspotted, often with a slight tint; costal membrane and bases of both wings usually reddish. Specimens in collections have frequently darkened, making accurate identification questionable. Wingspan: 43–55 mm (n = 4). Type: BMNH.

**Field notes:** More specimens need to be collected in the Western Cape to determine its range, habitat and host plants.

## Genus *Oudeboschia* Distant, 1920

Distant (1920) erected the genus *Oudeboschia* for specimens from Caledon in the Western Cape with seven apical areas in the wings.

# *Oudeboschia festiva*

Distant, 1920

**Appearance:** Similar to *Neomuda* species, but wings with seven apical areas. However, apical areas often vary and this could be the case with this species.

**Field notes:** No information available.

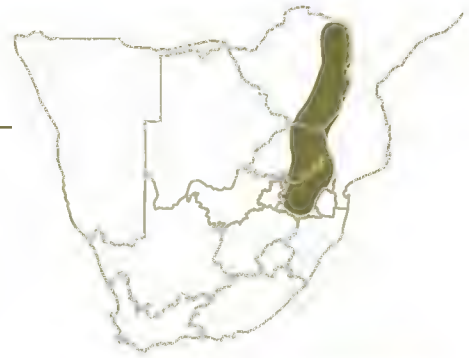
## Genus *Trismarcha* Karsch, 1891

- Forewings with eight apical areas.
- Hindwings with six apical areas.
- Head, including eyes, broader than base of mesonotum.
- Forewings with transverse vein at base of second apical area oblique.
- Breadth of forewings about 1/3 of their length (see Distant 1899 for more details).

# *Trismarcha sirius*

(Distant, 1899)

*Tibicen sirius* (Distant, 1899)



**Appearance:** The square head and thorax, and angled costae are good characters to identify this species. Wingspan: 48–50 mm (n = 23). Type: BMNH.

**Field notes:** A widespread species, ranging across the northern and eastern parts of South Africa, from KwaZulu-Natal up to Mapungubwe National Park in Limpopo Province. It is often found in thick grass close to the ground.

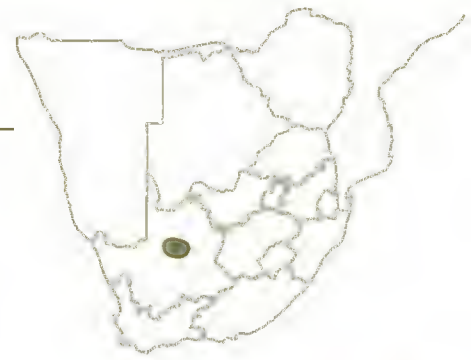
# Tribe Parnisini Distant, 1905

## Genus *Abagazara* Distant, 1905

- Forewings with eight apical areas.
- Wings with six apical areas.
- Forewings and wings hyaline.
- Expanded forewings up to 46 mm long.
- Head with front strongly projecting.

## *Abagazara bicolorata*

(Distant, 1892)



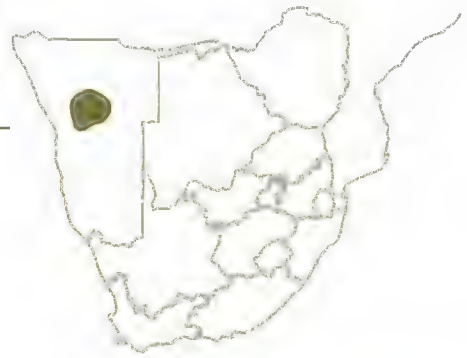
*Callipsaltria bicolorata* (Distant, 1892)

**Appearance:** Wingspan: 45–46 mm (n = 1). Type: BMNH.

**Field notes:** Very little information is available for this cicada. Distant (1892) gives only one locality as 'V. Wyks Vley' – presumably Vanwykvlei in the Northern Cape Province – and writes, 'The largest species of *Callipsaltria* yet described.' There is a specimen in the Natural History Museum in Cape Town.

# *Abagazara omaruruensis*

Hesse, 1925



**Appearance:** Only a poor specimen was available for illustration. I have yet to see a fresh specimen of this elusive species.

**Field notes:** The name suggests that it was first collected from Omaruru, northwest of Windhoek in Namibia, or along the Omaruru River, which extends to the coast.

## Genus *Calopsaltria* Ståal, 1861

- Forewings with seven apical areas.
- Hindwings with five apical areas.
- Ocelli placed close to base of head.

# *Calopsaltria hottentota*

Kirkaldy, 1909

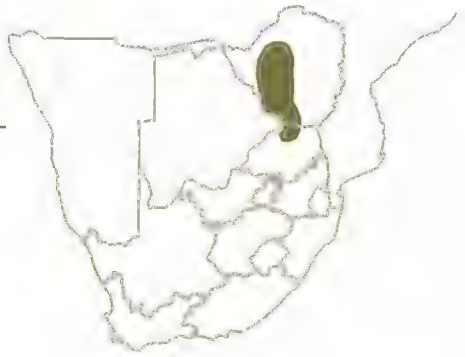
*Cicada elongata* Ståal, 1855 [*nec* Fabricius, 1781]

**Appearance:** Very small grass cicadas. Wingspan: 18–20 mm (n = 4).

**Field notes:** *Calopsaltria hottentota* and *C. longula* are very similar in appearance and have both been found in the same highveld locality.

# *Calopsaltria longula*

(Stål, 1855)



**Appearance:** Similar in appearance to *Calopsaltria hottentota.*

**Field notes:** These tiny insects are more easily found by sweeping with a net over short grass. Females of the species seem to sit higher up the grass stems.

# *Calopsaltria nigra*

(Karsch, 1890)

*Callipsaltria* [sic] *nigra* Karsch, 1890

♂

♀

**Appearance:** Wingspan 18–20 mm (n = 6). Type: Museum Berol.

**Field notes:** A specimen exists in the Iziko South African Museum, but without locality information. Rustenburg is mentioned elsewhere by Distant.

## Genus *Henicotettix* Stål, 1858

- Forewings with eight apical areas.
- Wings with six apical areas
- Head with front strongly projecting, narrower than length of vertical margins, which are convex, margins of both discontinuous, almost at right angles to each other.
- Anterior tibiae apically, spinously produced beyond insertion of the tarsi (Stål 1858).

# *Henicotettix hageni*

Stål, 1858

**Appearance:** Abdomen not inflated, tegmeni somewhat narrow, with the smallest apical cell close to the costal margin.

**Field notes:** Variations in the apical areas in the wings are very noticeable.

## Genus *Koranna* Distant, 1905

- Wings with six apical areas.
- Forewings about three times as long as broad.
- Abdomen about as long as space between apex of head, and base of cruciform elevation.
- Basal cell generally about twice as long as broad.
- Opercula in male not reaching base of abdomen.
- Rostrum extending beyond intermediate coxae.

# *Koranna analis*

Distant, 1905

**Appearance:** The striking dark patterns of the forewing are constant for all specimens seen. Some colonies have a golden flush to the hindwings. Wingspan: 52 mm (n = 8). Type: BMNH.

**Field notes:** Specimens from Paradyskloof in the Richtersveld were found calling from green shrubs along the dry stream in that valley. However, they seem to prefer flying along arid sandy slopes, often settling on a thin twig from where they call and watch you from both sides of their perch, flying off in a fast low flight of some 25 m when disturbed. They continue their interrupted song immediately after they have settled. They start calling at 11:00 and become silent before 15:00. It is not known if they have a dawn-dusk chorus. Specimens in the National Collection of Insects, Pretoria, show that they extend their range into Namibia. A similar unnamed species was found in the vicinity of Springbok further south, with reduced but similar markings on the forewing, but this species preferred the green karoo bushes of that area. Years of drought have decimated the green shrubs in Paradyskloof and only dust remains – the cicadas have not been seen there since.

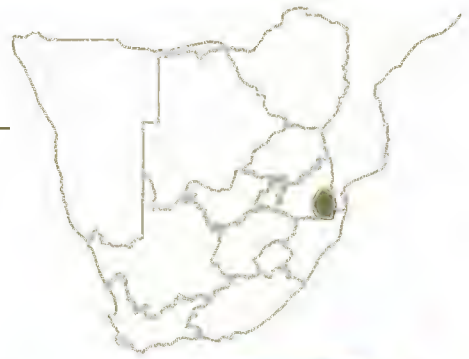
## Genus *Mapondera* Distant, 1905

- A small genus consisting of two described species.
- Forewings with eight apical areas.
- Hindwings with four, sometimes five, apical areas.
- Head with front prominently produced.
- Margins of front and vertex more or less continuous.

# *Mapondera capicola*

Kirkaldy, 1909

*Cicada pulchella* Stål, 1855 [*nec* Westwood, 1845]



**Appearance:** This rare little grass cicada with its striking colour is unmistakable. The wing venation of this specimen is similar to *Calopsaltria*. Unfortunately, Neville Duke was the only person with any information about this species. His early death is much regretted. Wingspan: 25 mm (n = 2).

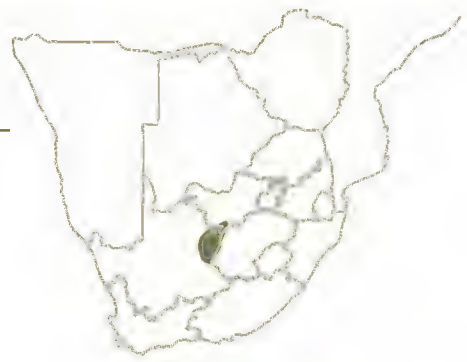
**Field notes:** Both specimens I have are males (I would like to see a female) from the Malolotja National Park in Eswatini. They may be more widespread, but scarce. The late Neville Duke observed these cicadas while collecting Lepidoptera in Eswatini. He wrote, 'males fly around in mixed bush and grassland, flying very fast and erratically. They "click" only whilst in flight and when settling near a newly emerged female. Once a newly emerged female is found, it is possible to collect males which are attracted to her. It seemed impossible to collect free flying males due to the speed they fly.' Fortunately, it is sometimes possible to find specimens clinging to grass stems.

## Genus *Masupha* Distant, 1892

- Members of this genus favour parched areas of the Northern and Western Cape, where they are widespread but not, apparently, numerous. Their emergence may depend on the arrival of rain, which varies from year to year and between localities.
- Forewings with eight apical areas.
- Hindwings with six apical areas.
- Head with frons not prominently produced.
- Margins of frons and vertex continuous.
- Forewings with first and second ulna areas narrow, much longer than broad.
- Basal cell broader at base than apex, not twice as long as broad.

# *Masupha ampliata*

Distant, 1892



**Appearance:** The *Masupha* species generally lack markings on the lateral surface of the thorax, but *M. ampliata* has some distinctive yellowish marks. Wingspan: 46–49 mm (n = 2). Type: BMNH.

**Field notes:** Like other species in this genus, this cicada prefers the semidry areas north and west of Kimberley and can be flushed from the low shrubs that cover the flats of the Nama-Karoo. I collected two at Windsorton in January 1995, but further visits to the same locality were unsuccessful.

# *Masupha delicata*

Distant, 1892

**Appearance:** Abdomen with yellowish stripes; yellowish costal margin. Wingspan: 62 mm (n = 2). Type: BMNH.

**Field notes:** Found in dry areas around Springbok, Okiep and into Bushmanland. It flies in similar terrain to *Masupha dregei* but can be easily separated by the length and shape of the forewings.

# *Masupha dregei*

Distant, 1905

**Appearance:** The angled forewing and the black abdomen is characteristic of this pretty cicada. Wingspan: (variable) 40–49 mm (n = 3). Type: BMNH.

**Field notes:** A resident of the dry Northern Cape and Bushmanland, it has been collected at Okiep and probably occurs further north towards Namibia.

## Genus *Psilotympana* Stål, 1861

- Forewings with six apical areas.
- Wings with six apical areas.
- Other details similar to *Quintilia*, except:
  - Forewings with first and second apical areas short, not longer than the eighth.
  - Forewings and wings pale 'talc-like'.
  - Forewings' venation and costal membrane ochraceous.
  - Rostrum reaches intermediate coxae.

No further information or specimens for illustration available on *Psilotympana* species.

## Genus *Taipinga* Distant, 1905

- Forewings with eight apical areas.
- Hindwings with five apical areas.
- Ocelli well separated from base of head.
- Wings hyaline, longer than body.
- Forewings with post-costal area narrow, but distinct.
- Basal cell twice as long as broad.
- Head with margins of front and vertex more or less continuous, front not prominently projecting (Distant 1906).

# *Taipinga albivenosa*

(Walker, 1858)

*Cicada albivenosa* Walker, 1858

**Appearance:** Wingspan variable, from 26–30 mm. Type: BMNH.

**Field notes:** This cicada was originally reported from Port Natal.

# *Taipinga consobrina*

Distant, 1906

**Appearance:** Wingspan: 27 mm (n = 10). Type: BMNH.

**Field notes:** This little cicada is widespread across the North West, Gauteng and Limpopo Provinces, from Rustenburg to Lydenburg and further north.

## *Taipinga fuscata*

Distant, 1906

**Appearance:** No information available. Type: BMNH.

**Field notes:** The originally described habitat is that of Rustenburg in the North West Province, but it has also been found in the Lydenburg District. It probably occurs in suitable habitat between these two areas.

## *Taipinga fusiformis*

(Walker, 1850)

*Cicada fusiformis* (Walker, 1850)

**Appearance:** No information available. Type: BMNH.

**Field notes:** No information available.

# *Taipinga infuscata*
(Distant, 1892)

*Psilotympana infuscata* Distant, 1892

**Appearance:** No information available, photographed from a museum specimen. Type: BMNH.

**Field notes:** No information available.

# *Taipinga luctuosa*
(Stål, 1855)

*Cicada luctuosa* Stål, 1855

**Appearance:** Veins in the forewings coloured a rusty brown. Wingspan: 37 mm (n = 4). Type: not known.

**Field notes:** All specimens of *Taipinga luctuosa* in the Iziko South African Museum were collected in KwaZulu-Natal in the vicinity of Mfongosi (Zululand). However, it has also been found on the verges of False Bay in KwaZulu-Natal.

# *Taipinga nigricans*

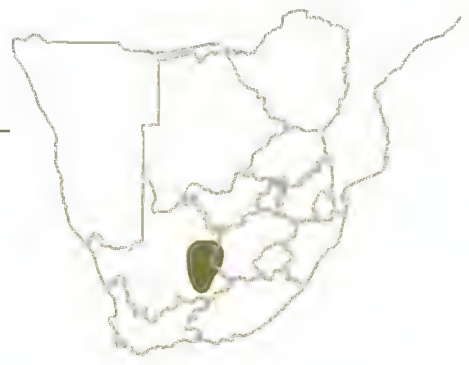
(Stål, 1855)

**Appearance:** Head, thorax and abdomen black; costal borders dark.

**Field notes:** *Taipinga nigricans* appears to be widely scattered across southern Africa, with records from Pretoria, the Lydenburg District, in the Eastern Cape and Mashonaland in Zimbabwe. We have, however, not found it to be a common species.

# *Taipinga rhodesi*

Distant, 1920



**Appearance:** No specimens available for illustration. Type: BMNH.

**Field notes:** Originally found in the Kimberley area, possibly named after Cecil John Rhodes.

# *Taipinga undulata*

(Thunberg, 1822)

*Tettigonia undulata*, Thunberg, 1822

**Appearance:** Fairly similar to *Taipinga luctuosa*, veins in the forewings less heavily marked in the fresh specimens we have seen.

**Field notes:** No information available.

## Genus *Zouga* Distant, 1906

The genus *Zouga* needs professional taxonomic attention. Possible as many as 40 species of *Zouga* have been noted in collections, but great uncertainty exists about the originally described species. I have a specimen with only four apical areas in the hindwings. Images of the genus have been included without authentication of the species (apart from *Z. festiva*). Locality maps have been compiled from original descriptions.

- Forewings with eight apical areas.
- Hindwings with six apical areas.
- Forewings more than three times as long as broad.
- Basal cell broad at base, almost as broad as long.
- Head with front broad and prominent.
- Forewings expanded: 20–24 mm long.

## *Zouga festiva*

Distant, 1920

**Appearance:** Wingspan: 37 mm (n = 2). Type: BMNH.

**Field notes:** A note from Neville Duke mentions that it calls while in flight with clicks before settling in grass; they are too fast to catch in flight.

# *Zouga apiana*

Hessa, 1925

**Appearance:** This poor, soiled specimen is the only one available. Type: BMNH.

**Field notes:** No information available.

# *Zouga hottentota*

Distant, 1914

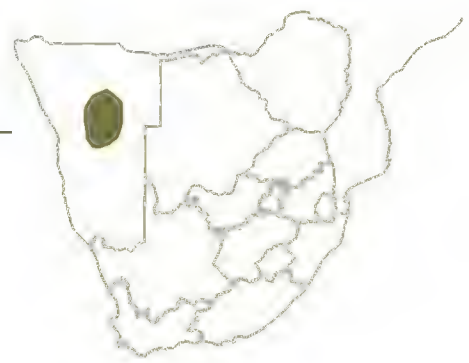
*Mapondera hottentota* Kirkaldy, 1909
*Cicada abdominalis* Stål, 1855: 90 [*nec* Donovan, 1798]

**Appearance:** No specimens available for illustration. Type: BMNH.

**Field notes:** This cicada appears to be a highveld grassland species.

# *Zouga typica*

Distant, 1906



**Appearance:** No specimens available for illustration.

**Field notes:** A specimen was found south of the Etosha National Park in Namibia. Apparently it flies in March.

# Subfamily Tettigomyiinae Distant, 1905

## Tribe Lacetasini Moulds & Marshall, 2018

### Genus *Lacetas* Karsch, 1890

- Forewings with nine apical areas.
- Hindwings with six apical areas.
- Head strongly produced, pointed.

## *Lacetas annulicornis*

Karsch, 1890

**Appearance:** This insect scarcely looks like a cicada; head projecting strongly; wings elongated; fresh specimens are bright green. Wingspan: 39 mm (n = 1). Type: Museum Berol.

**Field notes:** This little cicada occurs in bushveld in the north of South Africa and has been collected at light at Katima Mulilo in the Caprivi Strip along the Zambesi River in December. When I first saw it in the Caprivi (Namibia), I only collected a single specimen. It may well inhabit an area including Botswana and into Zimbabwe.

## Tribe Malagasiini Moulds & Marshall, 2018

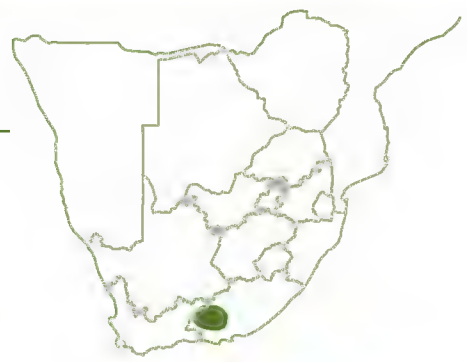
### Genus *Quintilia* Stål, 1866

- Forewings with eight apical areas.
- Hindwings with six apical areas.
- Head and eyes not as wide as pronotum and not prominently projecting.
- Forewings with first and second apical areas longer than the eighth.
- Basal cell about twice as long as wide.
- Some *Quintilia* species may be moved to other genera, including to *Koranna*. Some molecular evidence suggests that certain species of *Quintilia* may be more closely related to *Koranna*, and work is continuing in this direction.

# *Quintilia annulivena*

(Walker, 1850)

*Cicada annulivena* Walker, 1850

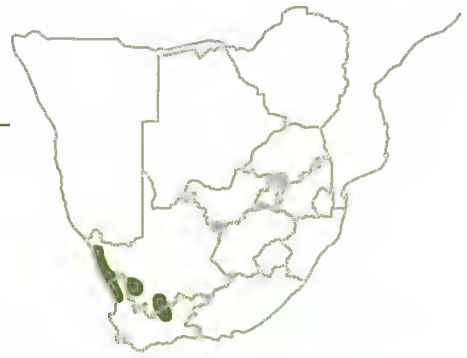


**Appearance:** No information available. Wingspan: 43 mm (n = 1). Type: BMNH.

**Field notes:** This cicada has been found in the area of Willowmore in the Eastern Cape Province.

# *Quintilia aurora*

(Walker, 1850)



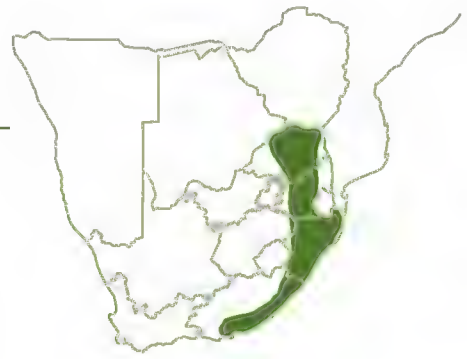
*Cicada aurora* Walker, 1850
*Tibicen sanguinarius* Stål, 1866

**Appearance:** A striking cicada with bright red colouring to its wings. Wingspan: 55–60 mm (n = 8). Type: BMNH.

**Field notes:** *Quintilia aurora* is found in widely separated areas of the Western and Northern Cape Provinces. They occur at high altitude at Sutherland, an area where temperatures drop below freezing point each winter, and also further south at Matjiesfontein. A single specimen in the National Museum, Bloemfontein is labeled 'Loeriesfontein' and similar specimens have been found on top of Paradyskloof in the Ai-|Ais/Richtersveld Transfrontier Park, now a World Heritage Site. Furthermore, a similar-looking species is found at sea level in the vicinity of Hondeklipbaai on the West Coast of Namaqualand, however, it lacks red on the forewings. The higher altitude specimens occur in areas known as Western Mountain Karoo (Acocks 1988). The sea level specimens may represent a different species. *Quintilia aurora* emerges at the beginning of January.

# *Quintilia carinata*

(Thunberg, 1822)



*Tettigonia carinata* Thunberg, 1822
*Cicada tristis* Germar, 1834
*Cicada nigroviridis* Walker, 1852

**Appearance:** Head greyish. Largely a black body, but some colonies are greenish. Wings hyaline. Wingspan: 40–50 mm (n = 39). Type: MfN.

**Field notes:** This insect is widespread across the grasslands of the predominantly western part of the country. It has a number of different forms and colours which may reveal new species once they are studied. We have specimens from the Drakensberg, Pretoria and through the Eastern Cape as far south as Nature's Valley. At least one of them enjoys a forest locality. They can be abundant in a particular locality where their crackling call can be clearly heard.

A recently emerged specimen of *Quintilia carinata* shows off its fresh green thoracic markings. Photographs: Peter Webb.

# *Quintilia catena*

(Fabricius, 1775)

*Tettigonia catena* Fabricius, 1775
*Cicada nebulosa* Olivier, 1790
*Cicada hyalina* Olivier, 1790
*Cicada garrula* Olivier, 1790
*Tettigonia crenata* Thunberg, 1822

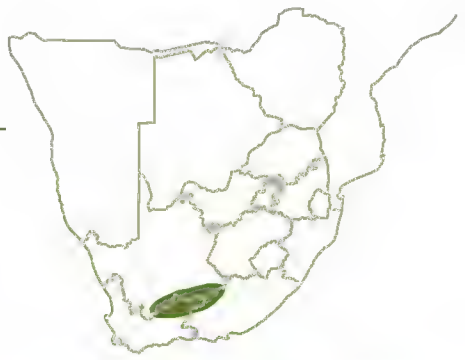
**Appearance:** Wingspan: 50–55 mm (n = 5). Type: Museum Berol.

**Field notes:** *Quintilia catena* occurs in the higher hills of Sutherland and Beaufort West and other areas inbetween.

# *Quintilia conspersa*

Karsch, 1890

*Lycurgus conspersus* Kato, 1932

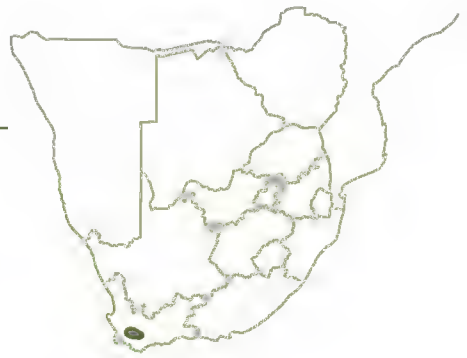


**Appearance:** Wingspan: 44 mm (n = 2). Type: Museum Berol.

**Field notes:** In January 1989, W.R.J. Dean and S.J. Milton observed and recorded a mass emergence of a *Quintilia* species of cicada that was considered to be either *Q. conspersa* or a close relative (Dean & Milton 1991). Observations were made on the eclosion, calling behaviour, mating and oviposition of these cicadas. Much of the information gathered was new to our knowledge of southern African cicadas. This emergence took place in the Prince Albert vicinity of the Karoo from late December to about mid-January. It is possible that the cicada does not emerge every year, or sometimes only in smaller numbers. Mass emergences occur occasionally and are probably related to rainfall events. Host plants: Succulent Karoo shrubs, *Galenia fruticosa*, *Eberlanzia* species.

# *Quintilia dorsalis*

(Thunberg, 1822)



*Tettigonia dorsalis* Thunberg, 1822

**Appearance:** Body black, striped; costal margin yellowish, partially spotted. Wingspan: 42–52 mm. (n = 6). Type: Berlin Museum.

**Field notes:** Specimens of *Quintilia dorsalis* have been collected at Prince Albert and at a higher altitude above Beaufort West.

# *Quintilia maculiventris*

Distant, 1905

**Appearance:** Wingspan: 38 mm (n = 13). Type: BMNH.

**Field notes:** Distant (1906) writes that this species has a wonderful resemblance to *Melampsalta leucoptera*. He adds that he has specimens from Transvaal and Natal. My specimens are from Graaff-Reinet, where they were plentiful but elusive on shrubs at almost ground level.

# *Quintilia monilifera*

(Walker, 1850)

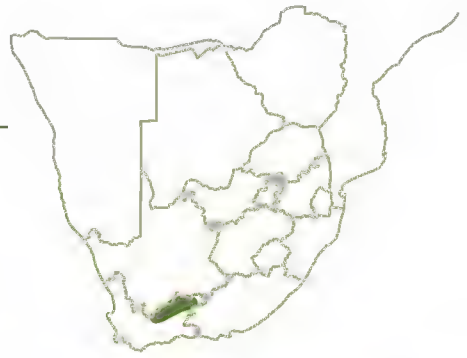
*Cicada monilifera* Walker, 1850
*Tibicen maculinervis* Walker, 1850

**Appearance:** A typical *Quintilia* in colour, shape and wing definition. Fresh specimens have an hour-glass outline on their thorax laterally. Wingspan: 45–49 mm (n = 18). Type: BMNH.

**Field notes:** No information available.

# *Quintilia musca*

(Olivier, 1790)



*Cicada musca* Olivier, 1790

**Appearance:** A smaller, bee-like species; body black; costal margin with spots up to the node; wings hyaline; a single spot at the junction between the seventh and eighth apical areas. Wingspan: 38–40 mm (n = 30). Type: Not located.

**Field notes:** A small *Quintilia* from the Karoo, often found in large colonies. The specimens in my collection are from Montagu in the Western Cape.

# *Quintilia obliqua*

(Walker, 1850)

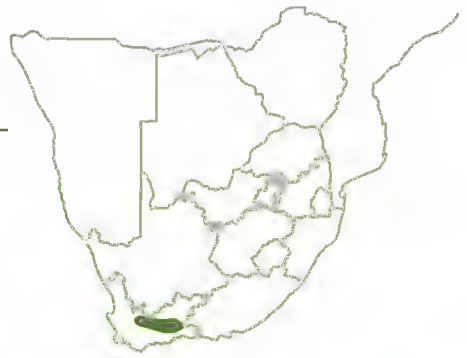
*Cicada obliqua* Walker, 1850

**Appearance:** No specimens available for illustration. Body black above, white powdery ventrally; face not prominent; wings hyaline. Wingspan: 39–42mm. Type: BMNH.

**Field notes:** No information available.

# *Quintilia pallidiventris*

(Stål, 1866)



*Tibicen pallidiventris* Stål, 1866

**Appearance:** Head black; costa speckled; wings with veins. Wingspan: 49 mm (n = 3). Type: unknown.

**Field notes:** One of several cicadas found by Dr H. Brauns at Willowmore in the Eastern Cape Province around 1916.

# *Quintilia peregrina*

(Linnaeus, 1764)

*Cicada peregrina* Linnaeus, 1764
*Cicada maculipennis* Germar, 1834

**Appearance:** Head and thorax black. Wingspan: 45–55 mm (n = 4). Type: BMNH.

**Field notes:** A handsome cicada with a distribution from Bredasdorp in the south, to the Pakhuis Pass in the Cederberg and presumably further north and across the Karoo.

# *Quintilia primitiva*

(Walker, 1850)

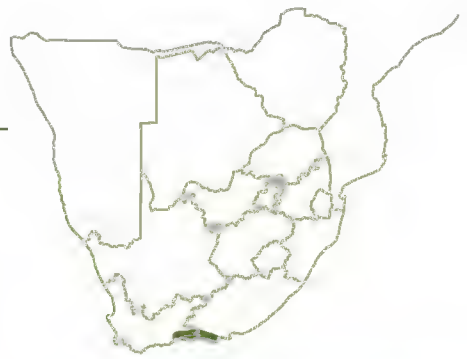
(*Q. primitiva* is a junior synonym of *Q. monilifera* Walker, 1850)
*Cicada primitiva* Walker, 1850
*Tibicen haematinus* Stål, 1866

**Appearance:** Head and body black. Typical *Quintilia*-type markings on the forewings. Type: BMNH.

**Field notes:** No information available.

# *Quintilia rufiventris*

(Walker, 1850)



*Cicada rufiventris* Walker, 1850
*Cicada holmgreni* Stål, 1856

**Appearance:** A large cicada; wings immaculate, unmarked. Wingspan: 62 mm (n = 2). Type: BMNH.

**Field notes:** This conspicuous cicada inhabits forests in the Western Cape Province, between the Tsitsikamma Forest and George.

# *Quintilia semipunctata*

Karsch, 1890

**Appearance:** No reliably identified specimens seen.

**Field notes:** No information available.

# *Quintilia umbrosa*

(Stål, 1866)

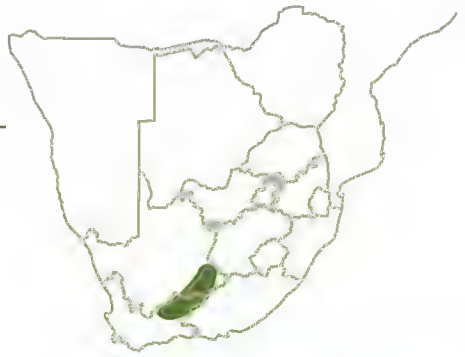
*Cicada diaphana* Germar, 1830
*Tibicen peregrinus* var. *b* Stål, 1866
*Tibicen umbrosus* Stål, 1866

**Appearance:** A small cicada, blackish head and thorax, herringbone pattern on forewings. Wingspan: 27 mm (n = 1). Type: BMNH.

**Field notes:** No information available.

# *Quintilia vitripennis*

Karsch, 1890

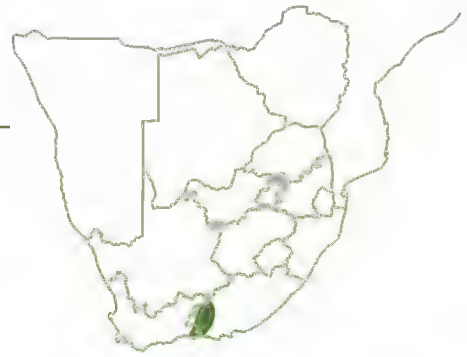


**Appearance:** Wingspan: 44 mm (n = 30). Type: BMNH.

**Field notes:** This cicada is sympatric with *Quintilia conspersa* but flies two months later. It flies fast out of low shrubs in the district of Graaff-Reinet and is difficult to catch. Specimens have also been collected at Cradock in the Eastern Cape and at Nature's Valley in the Western Cape. Dean & Milton (1992) observed an emergence on the Tierberg near Prince Albert in the Karoo in late September 1990.

# *Quintilia vittativentris*

(Stål, 1866)



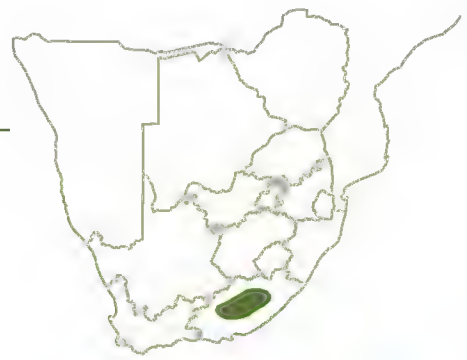
*Tibicen vittativentris* Stål, 1866

**Appearance:** Similar to *Quintilia carinata* with a body length of 18–20 mm; costa pale yellowish. Wingspan: 55 mm.

**Field notes:** No information available.

# *Quintilia walkeri*

China, 1925

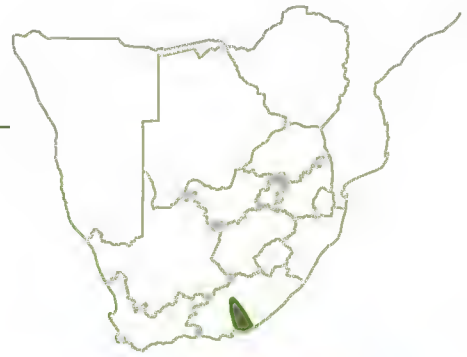


**Appearance:** Wingspan: 50–55 mm (n = 20). Type: unknown.

**Field notes:** While looking for specimens of *Platypleura chalybaea* in the dry euphorbia country south of Fort Beaufort in the Eastern Cape, a low-pitched 'bzzzzp' was heard repeated from the bushes. A colony of *Quintilia walkeri* was discovered under the leaves of the shrubs about a metre from the ground. On approaching, they would give a short warning chirp and fly fast to another twig. Their dark colouring matched the dry stems that they preferred making them difficult to spot. Although the colony occupied an area the size of a cricket ground, they did not seem to be gregarious and single specimens were sparsely scattered over the area. The following year the rains were late and, although the same area was revisited, no insects were heard.

# *Quintilia wealei*

(Distant, 1892)



*Tibicen wealei* Distant, 1892

**Appearance:** Body black above and below. Wingspan: 50–54 mm (n = 5). Distant (1892) gives a wingspan of 45 mm. Type: BMNH.

**Field notes:** No information available.

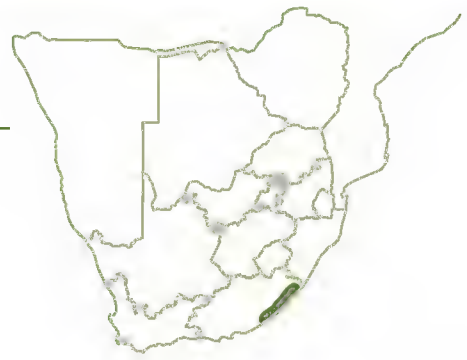
Habitat of *Quintilia wealei*, Fish River Valley Bushveld characterised by *Euphorbia bothae*, *Portulacaria afra* and assorted spinescent shrubs. This is a typical habitat for *Albanycada albigera*, *Quintilia wealei* and *Xosopsaltria thunbergi*, while *Platypleura plumosa* lives in the *Vachellia karroo* trees along the riverbanks. Photograph: M.H. Villet.

## Genus *Nyara* Villet, 1999

- Forewings with eight apical areas.
- Hindwings with six apical areas.
- Forewings narrow; wings hyaline.
- Costa curved in the ulna region.
- Abdomen tapered.

# *Nyara thanatotica*

Villet, 1999



**Appearance:** I was fortunate to find my first specimen of this species tangled in a spider web. It has long slender forewings, a brown body and a white tomentum. Wingspan: 55–57 mm (n = 3). Type: holotype, male at AMGT.

**Field notes:** *Nyara thanatotica* inhabits coastal forests in the Eastern Cape. Its name comes from this species' habit of feigning death (thanatosis) when disturbed. They either fly to a lower perch, or simply drop to the ground where they usually lie on their backs in leaf litter, exposing their white tomentum (R. Perissinotto & L. Clennel, pers. comm. to M.H. Villet). No mention of such thanatotic behaviour in other cicadas has been found. They are found on a variety of trees and do not seem to be host-specific. The species appears to be endemic to patches of coastal forest in the subtropical eastern half of the Eastern Cape.

## Tribe Tettigomyiini Distant, 1905

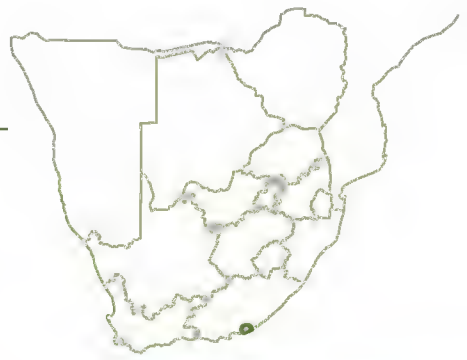
The small-bodied, clear-winged tettigomyiine cicadas are very hard to follow with the eye as they flit rapidly and erratically between perches. They tend to perch on grasses and the outer twigs of bushes. Their main predators are robberflies (Asilidae) and web-spinning spiders (Araneae). Males produce quieter calls than platypleurines, often clicking, churring or croaking. The males move through the habitat, flying between 1–20 m and calling for perhaps a minute whenever they land. The role of the call in mating is not clear, since the males search out sedentary females that generally emit no readily perceivable signals. These searching habits have facilitated the independent evolution of brachypterous females in several tettigomyiine genera, e.g. *Spoerryana*, *Stagira* and *Tettigomyia* (Boulard 1972). The most important ramification of this mating system is that females are unlikely to disperse very far, resulting in rather localised populations and higher rates of endemism in these cicadas. Molecular investigations of the relationships within the tribe have been initiated by Terence Bellingan.

### Genus *Bavea* Distant, 1905

- Forewings with nine apical areas; elsewhere described as having nine apical cells. However, we have specimens with eight, nine or ten apical areas.
- Hindwings with six apical areas.
- Head with front much subconically produced, as long as broad at base, margins of front and vertex continuous.
- Forewings with a subapical cell between third and fourth ulnar cells.
- Abdomen dilated.

# *Bavea concolor*

(Walker, 1850)



*Cephaloxys concolor*, Walker, 1850

**Appearance:** Body inflated; abdomen green, turning brown after death. Wingspan: 50–52 mm (n = 16). Type: BMNH.

**Field notes:** This monotypic genus is found in the Alexandria Forest in the Eastern Cape and was fairly common in 1989. Its protection is assured, as the Forest it inhabits forms part of the Addo Elephant National Park. Specimens were found after they started calling with a deep, soft buzz from grasses and low shrubs, often at ground level. They form small colonies of about a dozen individuals. The illustrated specimen has faded from its original green. This genus may soon be relegated to synonymy with the Tettigomyiini, if both DNA data and morphological analyses concur.

## Genus *Gazuma* Distant, 1905

These tiny cicadas, found in short grass, are usually only collected by sweeping blindly through the grass with a net and sifting through the resulting bag of grasshoppers, spiders, flies and the usual tangle of vegetation. There seems to be a larger percentage of females collected this way and this may be because they perch higher up the grasses.

- Forewings with eight apical areas.
- Hindwings with five, sometimes four apical areas; females with brachypterous wings have fewer.
- Abdomen usually inflated, robust.
- Forewings broad and short, usually only about two-thirds the length of the body.

### *Gazuma barrettae*

Distant, 1905

To become *Xosopsaltria barrettae*, unless it proves to be a synonym of a known species.

**Type:** BMNH.

### *Gazuma delalandei*

Distant, 1905

**Appearance:** Males are darker than females: Type: BMNH (female specimen).

**Field notes:** Efforts to link this species, described from a female type, with its male counterpart are hindered because females of several *Gazuma* species are still unknown. This is one enigma that DNA will probably not solve, because the type specimen is too old (pers. comm. M.H. Villet).

# *Gazuma pretoriae*

Distant, 1905

Brachypterus females of the genus *Gazuma*, shown here with a male for the first time.

**Appearance:** Male is similar in appearance to *Stagira* species but smaller. Wingspan (the male): 22 mm (n = 9). Type: BMNH.

**Field notes:** These tiny grass-loving cicadas are usually only found when sweeping through grass with a net.

## Genus *Stagea* Villet, 1994

- Forewings with nine apical areas.
- Hindwings with seven apical areas.
- The presence of nine apical cells on the forewing, seven on the hindwing, the bottle-necked main rib of the tymbal, the keel of the aedeagus, and the truncated apex of the pygofer together serve to identify this taxon (Villet 1994).

# *Stagea platyptera*

Villet, 1994

♂
Adult

♂
Immature

♀

**Appearance:** On eclosion, male specimens are almost colourless, then turning green, and finally developing their red body; the fully mature colouring is a striking bronze colour to the forewings with

*Stagea platyptera* was rediscovered in this lush habitat next to a strong stream. The plants are *Acalypha wilmsii*. Photograph: R.D. Stephen.

the hindwings tinted a pale gold. Females are smaller than males and green. Wingspan: 50 mm (male) and 34 mm (female) (n = 24 and 1 respectively). Type: holotype male at AMGT; specimens have been donated to TMSA and JBB, and deposited at AMGT. The female specimen has been deposited at TMSA.

**Field notes:** For years a single specimen of a cicada strikingly different in its wing venation, resided in the Albany Museum in Makhanda (formerly Grahamstown). It was described by Villet (1994b) as a monotypic genus. The label information gave the locality as Luneburg, on the boundary between KwaZulu-Natal and Mpumalanga, and the date of capture April 1913. After several long and fruitless searches at the type locality – on the steep, thickly forested southern side of the hill that dominates Luneburg (Mzaga Hill) – my attention was drawn to the warmer, northern side. The keen interest of a local farmer, Horst Filter and his son Bernard, resulted in an urgent phone call at Christmas in 2006 that had me on the road immediately. Specimens of this cicada had been found in a thick growth of bulbous plants close to a trout stream. The host plant was identified by the South African National Biodiversity Institute as *Acalypha wilmsii*. A single female was eventually found, it is smaller than the male and is a green colour that matches its presumed host plant.

*Stagea platyptera* in its various colour forms.

## Genus *Stagira* Stål, 1861

This genus consists of 39 species, endemic to southern Africa. They are all small, of similar appearance, and characterised by the dorsally ridged or tented shape to their abdomens. Most are sylvan species, some are found in grassland, some in coastal habitats and others at altitude. They form colonies calling to each other in soft buzzes and ticks and their colouring makes them difficult to spot in their chosen habitats. Each species is usually localised in geographic distribution. Some species have become isolated within a particular forest, and their locality can therefore help with their identification. In a number of cases the silent females have not yet been discovered and a few are brachypterous. This flight limitation by the breeding female will surely limit its spread and distribution and is possibly the reason why there are so many species. They will be vulnerable to habitat destruction. The green body pigments age and discolour to shades of brown or yellow and museum specimens rarely retain their live colours. In some species this process leaves specimens predominantly red and/or black. Males of *Stagira segmentaria* and *S. sylvia* are green when they eclose, and become red or dull purple as they mature; this probably occurs in most red-pigmented species. For these reasons, emphasis should be placed on morphology, rather than colouration, when identifying specimens. The species in this genus are not listed alphabetically, but are grouped according to Villet's (1997b) systematic revision of the genus.

- Forewings with eight apical areas; longer than body.
- Hindwings with six, rarely five apical areas.
- Abdomen always more or less inflated, dorsally ridged.

A specimen of *Stagira microcephala* on a shrub. Photograph: Peter Webb.

# *Stagira furculata*

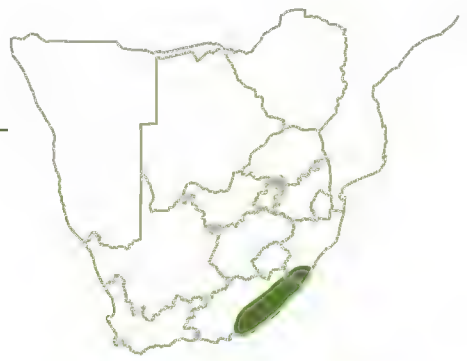
Villet, 1997

**Appearance:** Body green; the red costal margins and the general locality of the Eastern Cape are good characters to identity this species. Female is similar in appearance to the male. Wingspan 33 mm (n = 5). Type: holotype male at TMSA; allotype at AMGT; paratypes at TMSA, SANC and NHMZ.

**Field notes:** This *Stagira* is fairly widespread in the Eastern Cape and flies from November to February.

# *Stagira pondoensis*

Villet, 1997

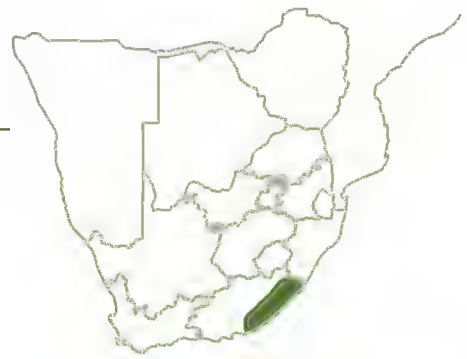


**Appearance:** Body green, costal area, tibiae, tarsi and posterior margins of abdominal sternites red in mature adults. The female lacks the red colours of the adult male. Wingspan: 35 mm. Type: holotype male at SANC; allotype and paratypes at SANC, TMSA and SAMC.

**Field notes:** This cicada was named after the Pondoland area of southern KwaZulu-Natal and the northern Eastern Cape where it flies along forest fringes from November to February. The illustration shows an immature male lacking red costal margins.

# *Stagira elegans*

Villet, 1997



**Appearance:** Body green; abdomen suffused with red; forewings with a slight tint. Named for its slim and elegant appearance and its long wings; female is unknown. Wingspan: 32–36 mm (n = 5). Type: holotype male at AMGT, paratype at SANC (as per Villet 1997).

**Field notes:** This cicada can be found in coastal forests from the Eastern Cape into the Transkei, where it has been collected at Coffee Bay. It is active from October to January.

# *Stagira enigmatica*

Villet, 1997

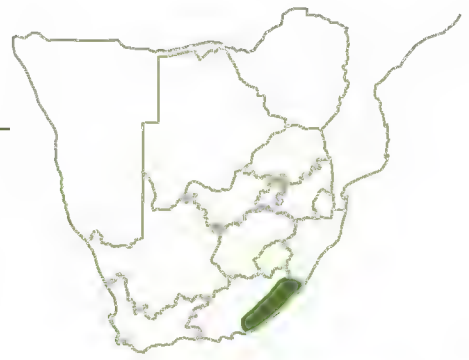
**Appearance:** No information available; female is unknown. Type: holotype male at SAMC.

**Field notes:** This species was described from a single male specimen found in SAMC, which lacked a label, therefore, no information exists as to its locality, habitat or flight period.

# *Stagira aethlius*

(Walker, 1850)

*Cicada aethlius* Walker, 1850



**Appearance:** Body green. Female is similar in size and colouration, but markedly brachypterous; the black thoracic mark on the illustrated specimen is not a natural mark. Wingspan: 26 mm (n = 5). Type: holotype at BMNH; paratypes at SAMC, TMSA, NHMZ, AMGT.

**Field notes:** Another *Stagira* species found in the Eastern Cape. A female was caught in copula, which confirms taxonomic identity. It is active during December and January.

# *Stagira pseudaethlius*

Villet, 1997

**Appearance:** No specimens available for illustration; female is unknown. Type: holotype male at SAMC; paratype at SAMC.

**Field notes:** This cicada, named for its similarity to *S. aethlius*, is a resident of southern KwaZulu-Natal, flying in November. I have yet to see the species.

# *Stagira virescens*

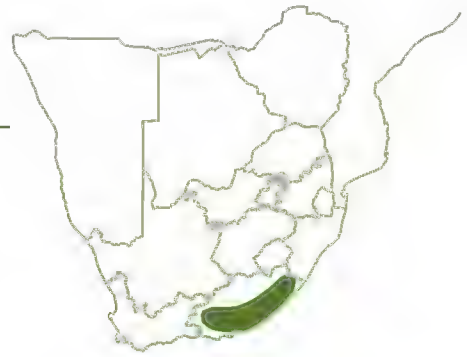
Kirkaldy, 1909

**Appearance:** Body green. Female similar to male, but brachypterous, forewings not reaching the end of abdomen. Wingspan: 20 mm (n = 6). Type: holotype male at BMNH; paratypes at SANC and TMSA.

**Field notes:** Found in southern Zululand and central KwaZulu-Natal, often close to forests in *Panicum* grassland, from October to December.

# *Stagira simplex*

(Germar, 1834)



*Cicada simplex* Germar, 1834

**Appearance:** Female is similar to male but lacks ventral black abdominal markings; black veins around the anterior and distal edges of the basal cell are characteristic of this species. Wingspan: 29 mm (n = 13). Type: lectotype male at HUMB; paralectotypes at HUMB.

**Field notes:** This *Stagira* has a wide distribution in the Eastern Cape, appearing in *Panicum* grassland and also in short, grazed pastures. It is active from November to February.

# *Stagira caffrariensis*

Villet, 1997

**Appearance:** Body yellow-green; forewings lightly tinted with green; axillary membranes of wings pale orange in fresh specimens.

**Field notes:** Found in *Panicum* grassland from November to February.

# *Stagira sylvia*

Villet, 1997

**Appearance:** Body, head and costal area purple-red; forewing tinted faintly golden-green. Immature specimens are almost completely green. The female is similar to the male, but larger, and lacks the red colouration of the male. Wingspan: 38 mm. Types: holotype male at SANC; allotype at SANC; paratypes at SANC and TMSA.

**Field notes:** This *Stagira* inhabits the eastern slopes of the northern Drakensberg Mountains around Mariepskop and extends its range down into the Mpumulanga lowveld. It is, as the name suggests, a forest-loving species and flies from November to March.

# *Stagira selindensis*

Villet, 1997

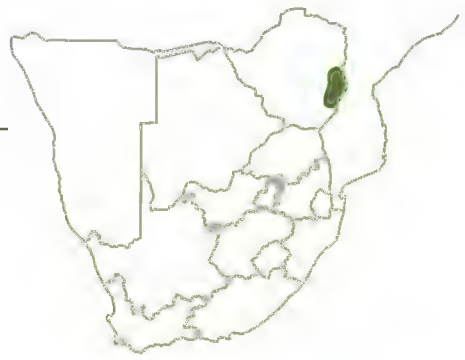
**Appearance:** No specimens available for illustration. Body green; female unknown. Wingspan: 35 mm (n = 1). Type: holotype male at TMSA.

**Field notes:** The *Stagira* type specimens were captured by the noted lepidopterist, Dr G. van Son of the Transvaal Museum, in 1962 and were labeled Mt Selinda, a town in Zimbabwe on the border with Mozambique. They were probably taken in the nearby Chirinda Forest, famous for its butterflies, in the month of January.

The Chirinda Forest on the eastern border of Zimbabwe is home to *Stagira selindensis*. Photographer: A.P. Marais.

# *Stagira oxyclypea*

Villet, 1997

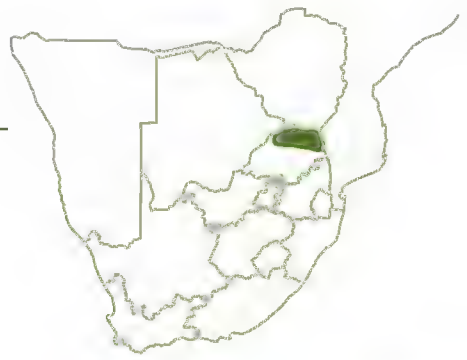


**Appearance:** Female similar to male. Types: holotype male at TMSA; paratypes at TMSA.

**Field notes:** This is the only other known *Stagira* species from Zimbabwe, discovered further north somewhere in the forests of the Vumba Mountains. Several other isolated forests along the eastern border of Zimbabwe could be home to more new species.

# *Stagira dendrophila*

Villet, 1997



**Appearance:** Thorax green; head, costal area and abdomen purple-red; forewing tinted golden-green. Immature specimens are green. Female green, similar to male, larger and without red or black markings. Wingspan: 36 mm (n = 5). Type: holotype male at TMSA; allotype at TMSA; paratypes at TMSA and SANC.

**Field notes:** Found along the higher rainfall eastern end of the Soutpansberg in Limpopo Province. This is a forest-dwelling species.

# *Stagira mystica*

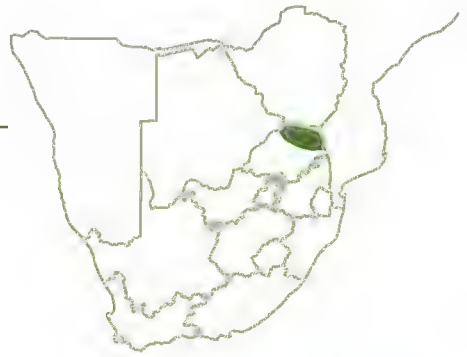
Villet, 1997

**Appearance:** Head and thorax grey-green; abdomen green; a black patch visible on the pleural areas of each abdominal tergite. Female unknown. Wingspan: 39 mm (n = 7). Type: holotype male at SANC.

**Field notes:** Another *Stagira* species from the Soutpansberg. Found in indigenous montane forest surrounding watercourses in November near Venda.

# *Stagira consobrina*

Distant, 1920

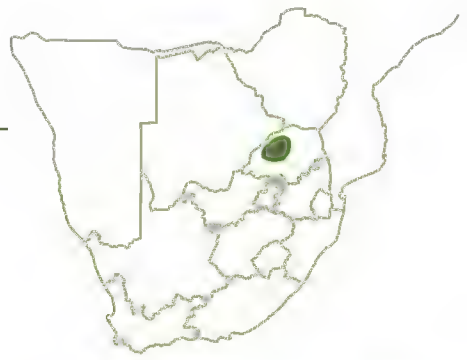


**Appearance:** Body green; costal area red; a red or dark median spot visible on the first abdominal sternite in some specimens. Female similar in appearance to male, slightly smaller, wings proportionally slightly shorter, lacks dark sternal spot. Wingspan (male): 34 mm (n = 1). Type: lectotype male at BMNH; paralectotypes at TMSA and SANC.

**Field notes:** This pretty little cicada inhabits the Soutpansberg and the vicinity of Venda in the north, and has been located at several well-wooded areas further south in Limpopo Province where it lives in grassland among thorntrees. The adult is active from December to February.

# *Stagira consobrinoides*

Villet, 1997

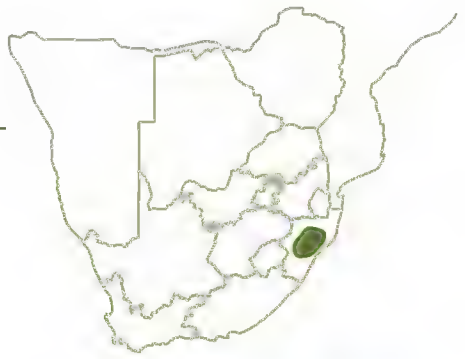


**Appearance:** Body and costal area probably green; a dark spot on the first abdominal sternite. Female unknown. Wingspan: 36 mm (n = 1). Type: holotype male at TMSA; paratypes at BMNH and TMSA.

**Field notes:** *Stagira consobrinoides* has been found at a few places in the Blouberg – a mountain that rises in isolation from the flat plain, like a breadroll on a plate – to the north of Polokwane in Limpopo Province.

# *Stagira xenomorpha*

Villet, 1997



**Appearance:** Body and costal area pale green; a dark dot on the pleural area of the anterior abdominal tergites; forewing with a very slight green tint. Female similar to male but, like several other *Stagira* species, has proportionately shorter wings. Wingspan (male): 25 mm (n = 10). Type: holotype male at SAMC; allotype at SAMC.

**Field notes:** This *Stagira* inhabits Zululand and specimens were last collected at Mfongosi in 1917.

# *Stagira segmentaria*

Karsch, 1890

**Appearance:** Body darker green, costal margin reddish,the posterior margins of the abdominal tergites red. Female similar to male, but uniformly green and lacks dark markings found on abdomens of males. Wingspan: 40 mm (n = 4). Types: lectotype male at HUM; three male paralectotypes at HUM.

**Field notes:** This cicada is widely distributed in the Eastern Cape, from littoral localities to the mountains of the Katberg and Hogsback. It inhabits xeric scrub thicket and adults have been recorded from September to March.

# *Stagira purpurea*

Villet, 1997

**Appearance:** Male with dark reddish colour (as its name suggests); ventral parts of thorax green; forewing with a slight tint. Female unknown. Wingspan: 39 mm (n = 1). Type: holotype male at SANC.

**Field notes:** The illustrated male was captured at Mt. Michael close to Pietermaritzburg along the top of the escarpment in KwaZulu-Natal by H.C. Ficq in January (year unknown).

# *Stagira nkandlhaensis*

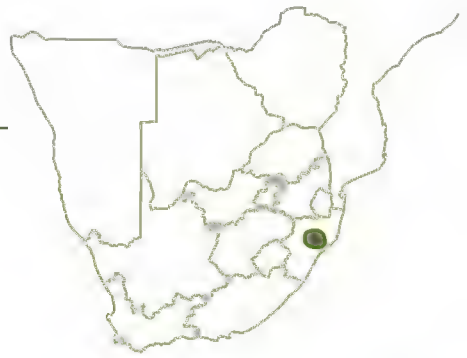
Villet, 1997

**Appearance:** Body and costal area red or, less often, green. Female slightly larger than male, abdomen tapered (in common with most *Stagira* species). Length of forewing: 21–23 mm (n = 1). Types: holotype male at SAMC; allotype at SAMC; paratypes at SAMC.

**Field notes:** This *Stagira* is confined to the isolated Nkandlha Forest in KwaZulu-Natal. Green specimens that were collected may have been immature insects that would have developed the red colour after a day or two. It flies in January.

# *Stagira ngomiensis*

Villet, 1997



**Appearance:** Thorax green; abdomen and costal area dull red. Female unknown. Wingspan: 45 mm (n = 1). Type: holotype male at SANC; paratype at SANC.

**Field notes:** This is another *Stagira* species that has only been found in one isolated forest. The Ngome Forest in KwaZulu-Natal is home to this little cicada, where it flies in December and January.

# *Stagira microcephala*

(Walker, 1850)

*Cephaloxys microcephala* Walker, 1850

**Appearance:** Dark green, margins of sternites yellow in fresh specimens. Female similar to male in size and colour. Wingspan: 46 mm (n = 20). Types: lectotype male at BMNH, other types in SANC and TMSA.

**Field notes:** The locality records of this cicada include the Ngoye Forest and other coastal forests in northern KwaZulu-Natal and Zululand, from late October to March. Peter Webb found them at Kloof in November and on a later visit in early April was surprised to find specimens still active.

# *Stagira nasuta*

Villet, 1997

**Appearance:** Pale green when fresh; lateral margins of the pronotum very pale, giving the effect of a streak from eye to wing; forewing with a slight green tint. Female similar to male in size and appearance. Wingspan: 33 mm (n = 8). Types: holotype male, allotype and paratypes at SANC; one paratype at TMSA.

**Field notes:** This cicada occurs in grassland from the Ndumo Game Reserve in the far north of KwaZulu-Natal on the Mozambique border, south to the False Bay area.

# *Stagira eshowiensis*

Villet, 1997

**Appearance:** Body and costal area green; forewing lightly green-tinted. Female unknown. Wingspan: 32 mm (n = 8). Type: holotype male at SANC.

**Field notes:** Named after the type locality, this cicada can be found in Zululand along forest margins (H.C. Ficq, pers. comm.).

# *Stagira stygia*

Villet, 1997

**Appearance:** Overal colouration yellow-green; clypeus, ocellar area and most of the thorax black; forewings shaded black, especially the the basal half; hindwings clear. Female presently unknown. Wingspan: 24–30 mm (n = 1). Type: holotype male at SANC; paratypes at TMSA.

**Field notes:** This cicada occurs in Limpopo Province and has been found at Haenertsburg and the Woodbush Forest Reserve in thick grass during December and January.

# *Stagira zebrata*

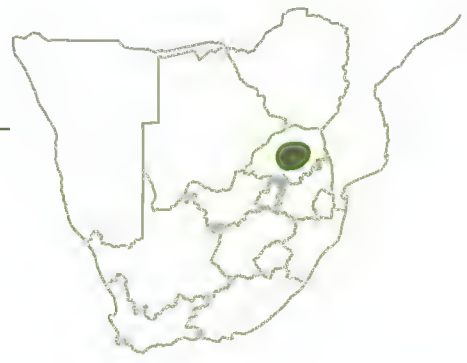
Villet, 1997

**Appearance:** Body and costal area yellow-green; wing veins blackened; some species almost entirely green. Female unknown. Wingspan: 24 mm. Types: holotype male at SANC; paratypes at SANC and TMSA.

**Field notes:** Named for the zebra-like black stripes on the pronotum of the adult. It is an inhabitant of the hot lowveld of Mpumulanga and Limpopo, and has been captured in places such as Barberton but also at a higher altitude near Haenertsburg in Limpopo Province. Adults are active during December and January.

# *Stagira sexcostata*

Villet, 1997

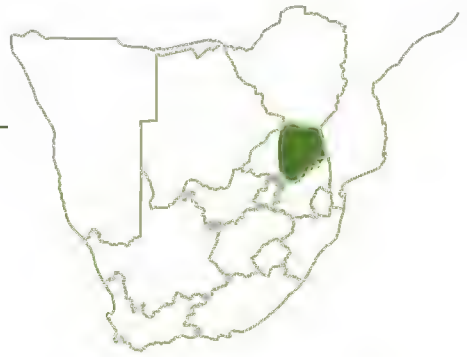


**Appearance:** No specimens available for illustration. Body and venation green; base of fore-wings tinted pale green; a pair of black comma-shaped marks on the mesonotum. Female is unknown. Wingspan: 26 mm. Type: holotype male at SANC.

**Field notes:** This cicada was discovered by H.C. Ficq in the Wolkberg Mountains in Limpopo, and was collected at Christmas, 1988, in 'very tall grass'. Its name refers to the six ribs of the tymbal.

# *Stagira fuscula*

Villet, 1997

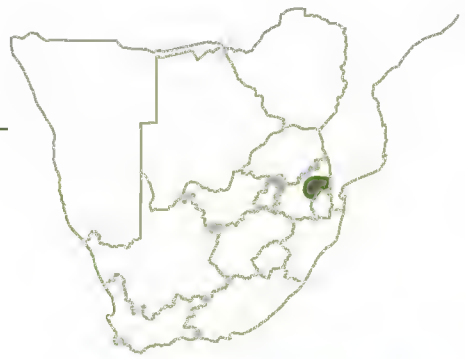


**Appearance:** Body and costal area dark green; dark line along sides of the clypeus. Female is unknown. Wingspan: 30 mm (n = 4). Types: holotype male at SANC; paratypes at TMSA.

**Field notes:** The name of this cicada refers to the darker green livery of the species compared with its congeners. It has been collected in widely separated spots across Mpumulanga. More fieldwork is needed to determine its distribution and habitat borders. The holotype was taken in short grass.

# *Stagira celsus*

Villet, 1997

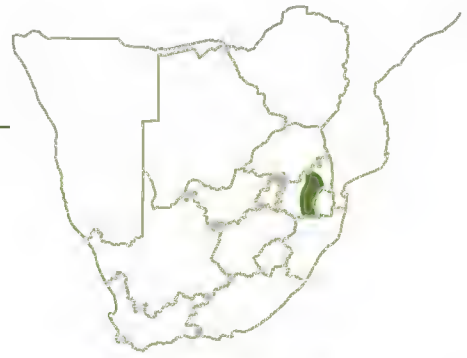


**Appearance:** Body and costal area green; dark streak along leading edge of basal cell of forewing; black mark visible on first abdominal sternite. Female still unknown. Wingspan: 24 mm. Types: holotype male at TMSA; paratypes at TMSA and AMGT.

**Field notes:** This species was collected at a high altitude in crown forest above 1 650 m at Elandshoek in Mpumalanga, flying at the end of November.

# *Stagira chloana*

Villet, 1997



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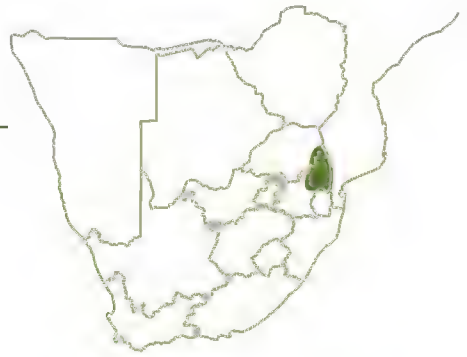
**Appearance:** Body and costal area green; dark median mark on the first abdominal sternite. Wingspan: 35 mm (male) (n = 20); 16 mm (female) (n = 4). Type: holotype male at TMSA.

**Field notes:** The holotype was collected at Piet Retief on the border with Eswatini at the end of December. It was named after the green colouration of the species. Peter Webb found them all along the N3 in grass in December 2014. By the middle of January they had disappeared. Several females were collected for the first time.

# *Stagira vulgata*

Villet, 1997



**Appearance:** Body and costal area green, forewing tinted slightly. The female is similar to male. Wingspan: 35 mm (n = 1) for both male and female. Types: holotype male at SAMC; allotype at SAMC; paratypes at TMSA.

**Field notes:** This species is widespread in the Mpumalanga Lowveld. A specimen was collected by R. Toms at an entrance to the Kruger National Park in December. The name alludes to the widespread distribution of the species.

# *Stagira viridoptera*

Villet, 1997

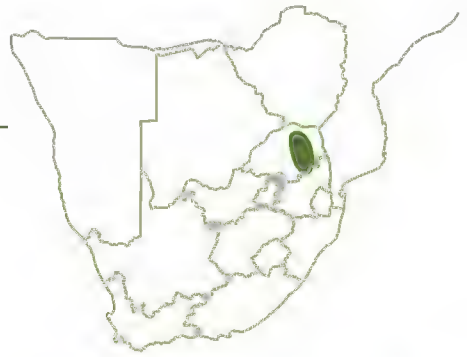
**Appearance:** Body green, forewings distinctively green. Wingspan: 33 mm (male) (n = 2); 26 mm (female) (n = 2). Type: holotype male at SANC.

**Field notes:** This cicada is found along escarpment forest fringes in Mpumalanga in December. A male and two female specimens were collected by A.P. Marais while grass-sweeping along a stream in the upper Dwarsrivier Valley in Mpumalanga during December – the two females were the first to be collected of this species. They are found in lush grass, usually in damp places, and can be seen clinging halfway up grass stems. They communicate with clicks and an occasional 'churr'.

Stream in the upper Dwarsrivier Valley where A.P. Marais collected three specimens of *Stagira viridoptera* during December. Photographer: A.P. Marais.

# *Stagira abnagata*

Villet, 1997



**Appearance:** Body and costal area green; forewing with a slightly brown tint. Female similar to male in colour and size. Wingspan: 32 mm (n = 19). Type: holotype male at TMSA; allotype at SAMC; paratypes at TMSA and SAMC.

**Field notes:** Found in the Ben Lavin Nature Reserve and up to Louis Trichardt, this *Stagira* is an inhabitant of Limpopo Province in typical bushveld. Adult specimens have been collected in February.

# *Stagira empangeniensis*

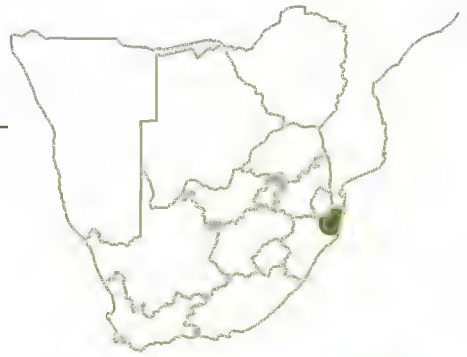
Villet, 1997

**Appearance:** Body and costal area green; forewing with a slight tint. Wingspan: 26 mm. Type: holotype male at SANC; paratypes at SANC.

**Field notes:** Specimens of *Stagira empangeniensis* have been collected in the vicinity of the KwaZulu-Natal town of Empangeni and can be found along the Zululand coastal plateau in grassland during October and November.

# *Stagira natalensis*

Villet, 1997

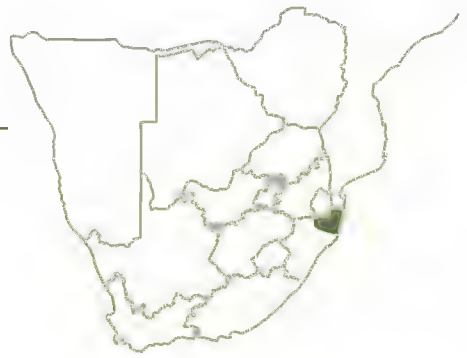


**Appearance:** Body and costal area green; dark median mark on first abdominal sternite. Female slightly smaller than male with shorter, narrower wings and lacks dark sternal spot. Wingspan: 32 mm (male) (n = 7). Types: holotype male; allotype and paratypes at SANC.

**Field notes:** This cicada is fairly widespread in northern KwaZulu-Natal, in tall *Panicum*-dominated grassland under thorntrees, between December and February.

# *Stagira zuluensis*

Villet, 1997

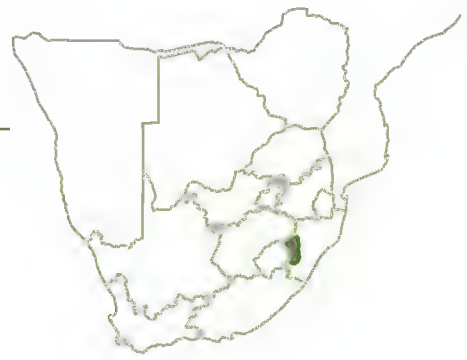


**Appearance:** Body and costal area green; some specimens with a dark spot behind the tymbal on either side of the abdomen. Female slightly smaller than male. Wingspan: 37 mm (male) (n = 15). Types: holotype male at SAMC; allotype at TMSA; paratypes at TMSA, AMGT and NHMZ (as per Villet 1997).

**Field notes:** This *Stagira* is found in grassland in the northern part of KwaZulu-Natal, from November to March.

# *Stagira dracomontanoides*

Villet, 1997



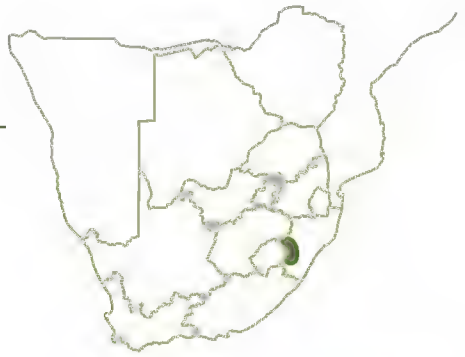
No specimens available for illustration.

**Appearance:** Body and costal area green, a dark spot on the first abdominal sternite. Wingspan: ± 35 mm. Types: holotype male and paratype at SANC.

**Field notes:** The species name of this *Stagira* indicates its similarity to *S. dracomontana*. It was collected at Cathedral Peak, Drakensberg, in December – to the north of the locality for *S. dracomontana*.

# *Stagira dracomontana*

Villet, 1997



**Appearance:** Overall green in colour with a few dark marks on the sides of the clypeus; a line of fine black dots or dashes along abdominal pleura; black spot visible on the first abdominal sternite. Female is unknown. Wingspan: ± 35 mm (n = 1). Types: holotype male at SAMC; paratypes at BMNH.

**Field notes:** Specimens of this cicada were gathered at the Royal Natal National Park on the slopes of the Drakensberg and further east at Van Reenen in November.

# *Stagira acrida*

(Walker, 1850)

*Cicada acrida* Walker, 1850

**Appearance:** No specimens available for illustration. Type: holotype female at BMNH.

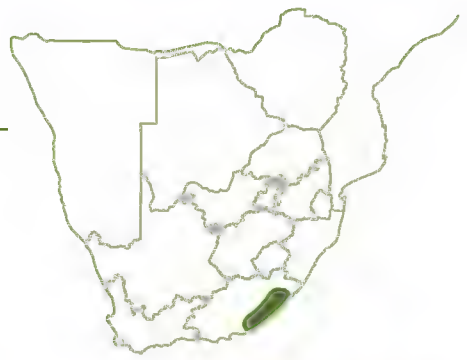
**Field notes:** This cicada was described from a damaged female found in the British Museum of Natural History. The locality label reads 'Cape Province, South Africa. Cape of G. Hope'. After comparing locality labels with other *Stagira* species described by Walker, it is speculated that it occurs in the Eastern Cape.

## Genus *Tettigomyia* Amyot & Audinet-Serville, 1843

- Forewings with six apical areas, but specimens often with seven or even eight.
- Hindwings with five apical areas, rarely one area reduced to a sub-apical area.
- Bases of upper vein to lower ulnar area and lower vein to radial area with almost a common origin at apex of basal cell.
- Wings hyaline; veins on forewings distinct.
- Abdomen inflated.

# *Tettigomyia vespiformis*

Amyot & Audinet-Serville, 1843



**Appearance:** Abdomen inflated with black stripes; forewing veins black. Wingspan: 33 mm (n = 20). Type: Amyot & Audinet-Serville could not determine where the type was.

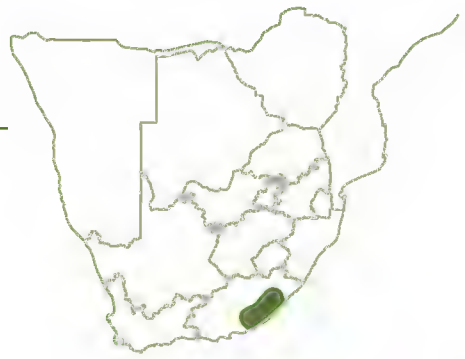
**Field notes:** This little cicada with its distinctive black-veined forewings is an inhabitant of the Eastern Cape, and is found in soft green *Panicum* grass under *Vachellia karroo* trees, usually together in some numbers. A similar species has also been collected by Dr D.H. Jacobs in the Nuweveld Mountains north of Beaufort West in the Cape.

## Genus *Xosopsaltria* Kirkaldy, 1904

- Forewings with eight apical areas.
- Hindwings with six apical areas.
- Forewings broad and short, about as long as body.
- Wings hyaline, veins distinct.
- Abdomen inflated.

# *Xosopsaltria annulata*

(Germar, 1830)



*Cicada annulata* (Germar, 1830)

**Appearance:** Body inflated, striped; costal area black; veins in forewings darker than in hindwings. Wingspan: 41 mm (n = 1).

**Field notes:** This is another striking cicada from the Eastern Cape.

# *Xosopsaltria schonlandi*

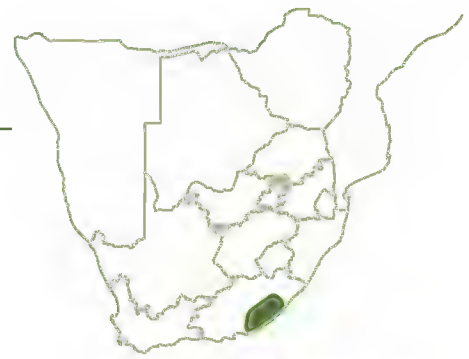
Distant, 1907

**Appearance:** No specimens available for illustration. Type: BMNH.

**Field notes:** No information available.

# *Xosopsaltria scurra*

(Germar, 1830)



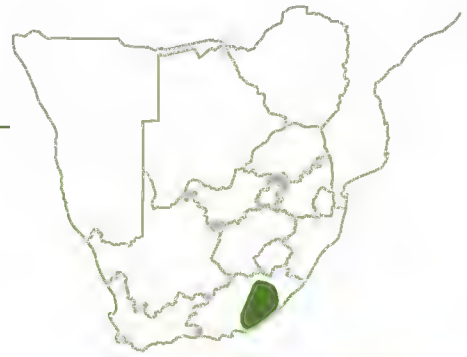
**Appearance:** Body inflated; stripes blurred; costal margins dark.

**Field notes:** The identity and status of *Xosopsaltria scurra* is presently under investigation by researchers at Rhodes University.

# *Xosopsaltria thunbergi*

Metcalf, 1955

*Tettigonia punctata* Thunberg, 1822



**Appearance:** Head and thorax black; abdomen inflated with a row of dark spots medially on tergites. Wingspan: 32 mm (n = 18). Type: unknown.

**Field notes:** A colony of *Xosopsaltria thunbergi* was discovered on the xeric bushes next to the road between Makhanda (formerly Grahamstown) and Fort Beaufort in the Eastern Cape. Their call was a harsh buzz and when disturbed, they would take flight for a distance of some 25 m to disappear from sight under the leaves of the shrubs. The whole colony was contained in an area smaller in size than a football field. A few years later I visited the site again, but found no sign of them.

# *Xosopsaltria brachyptera*

Sanborn & Villet, 2016

**Appearance:** This species is named for its short wings; the only *Xosopsaltria* species whose forewings do not extend to the posterior of the abdomen when they are in their resting position against the body (Sanborn & Villet 2016). Length of forewing: ± 11 mm. Type: AMGT, AFSC.

**Field notes:** A species recently described from the Eastern Cape, named for its relatively short wings which do not extend to the end of the abdomen. They were collected in open areas between bushclumps and in adjacent pastures between Makhanda (formerly Grahamstown) and Bathurst from where they were calling from grasses and weedy plants. They fly in November and December.

# *Xosopsaltria vitripennis*

Sanborn & Villet, 2016

**Appearance:** Overall tawny in colour; markings black and ochraceous. Female ochraceous, possibly green when fresh. Length of forewing: 18.01 mm (n = 14). Type: AMGT, AMSC. Type: AMGT, AMSC (as per Sanborn & Villet 2016).

**Field notes:** The species is named for its clear forewings. It is the only known *Xosopsaltria* without apical infuscation in the forewings. The species was collected in the Kowie Thicket vegetation type of the Albany Thicket Biome (Mucina & Rutherford 2006). Some called from grasses and weedy plants between bush clumps, while others called from the trunks of trees.

# *Species excluded from this publication*

As the title states, only the known species are included in this work. However, there are a number of genera where the confusion surrounding the exact identification of species has delayed our progress for too long. For example, we have some 40 species of the genus *Zouga* (M.H. Villet, pers. comm.), but only five have been described. So, the question is, which of the very similar-looking species are the ones described? Fortunately, Distant's descriptions are good (and in English) so those five can be included. There is always a chance of publishing an image and linking it with the incorrect taxon. It has been decided to avoid this risk, therefore, some genera only include known species. At some future stage, specialists will need to revise these difficult genera, like the good work done on *Stagira* – and much luck to them!

## Undetermined species excluded from this publication

Genus *Psilotympana* Stål, 1861 (apical areas 6+6)
- *P. ruficollis* Thunburg, 1822
- *P. signifera* Germar, 1830

Genus *Pauropsalta* Goding & Froggatt, 1904 (apical areas 5+5)
- *P. mimica* Distant, 1907

Would anyone like to identify this cicada? It was collected at Loskop Dam by John Gardiner. Photographer: A.P. Marais.

*Sing, "Singsingertjie", sing, sing, sing,*
*Sing the song of the sun!*
*After the long years underground,*
*With the cold, damp darkness all around;*
*Sing the glory of sunlight found;*
*Sing till the krantzes and kloofs resound-*
*Sing, "Singsingertjie", sing.*

From *Poems of a South African* (Juta & Co. 1943) by Arthur Vine Hall

# Glossary

With help from Henderson's Dictionary of Biological Terms (by J.H. Kenneth, 1963) and Collins Concise English Dictionary (1992).

This glossary contains extra taxonomic terminology – this will be useful to readers who want to read up on the species' original descriptions.

## A

**aedeagus:** part of the male genitalia which is inserted into the female during copulation.
**alar:** wing-like, wings.
**ampliate:** having outer edge prominent.
**anteclypeus:** fore part of the clypeus, just behind the rostrum.
**anterior:** nearer the head end.
**apical:** at the tip or summit; opposite of basal.
**apical cells:** cells at the distal end.
**apomorphic:** having an evolutionarily derived condition.
**atypical:** not typical.

## B

**brachypterous:** with short wings.

## C

**carinate:** having a keel or ridge.
**castaneus:** chestnut-coloured.
**circumcaudal band:** circa – around, caudal – tail.
**circumcaudal tomentum:** white band around tergite 8.
**cladistic:** classification of species according to evolutionary history.
**clypeus:** a sclerite structure below the frons, circumposed by the mandibles and above the labrum.
**congenerics:** belonging to the same genus.

## D

**dichromic:** two colour varieties, e.g. male and female of the same species.
**discal cell:** a large enclosed cell at the base of the wing.
**distal:** furthest away, opposite of proximal.
**dorsum:** upper surface, back, tergum.

## E

**eclose:** hatch.
**effaced:** to obliterate or make dim.
**endemic:** native to.
**evanescent:** disappearing early, fading.
**extant:** existing, opposite of extinct.

## F

**falcate:** sickle-shaped, hooked.
**fascia:** ensheathing band of connective tissue, a band or stripe.

**fenestrae**: clear areas in wing cells.
**fulvous**: deep yellow, tawny.
**furcate**: branching (like the tines of a fork).
**fuscous**: brown.

# G

**genae**: cheeks or side (part) of head.
**gibbous**: inflated, saccate, pouched.

# H

**homoplasy**: evolutionarily convergent characters, resemblance between organisms due to independent evolution along similar lines.
**hyaline**: clear, translucent.
**hypandrium**: sternite viii of male cicadas.

# I

**incisures**: notches, depressions, indentations.
**infuscated**: tinged to appear dark, darker as in insect wings.
**integument**: covering, coating, outer structure or layer, hence, the insect skeleton.
**interstitial**: in between.

# J

**jugum**: a small lobe on hindwing next to the anal cell.

# L

**lateral**: side; lateral view is viewed from the side.
**lectotype**: a specimen chosen from among a series of syntypes to serve as the primary type.
**limbus**: border of cicada wing between ambient vein and wing margin.
**localities**: *borealis* – far northern; *septentrionalis* – northern; *meridionalis* – southern; *orientalis* – eastern; *occidentalis* – western.

# M

**maculation**: spot.
**meatus**: a passage, tube or channel (e.g. nasal).
**median groove**: groove lying along axial plane.
**meracanthus**: small flat V-shaped projection at base of hind legs that projects over the operculum.
**mesonotum**: dorsal part of mesothorax.
**mesoscutellum**: middle, small shield; scutellum of mesothorax.
**monotypic**: a single type, having one species.
**morphism (obsolete term)**: occurrence of different forms of individuals in the same species.
**morphological**: the form and structure of an insect, as distinct from its functions.

# N

**notum**: the dorsal portion of insect segment, tergum.

# O

**ochraceous**: pale brownish yellow.
**opercula**: tympanum covers.

# P

**paramedian**: beside, against.
**paranotal lobes**: *para* means beside, *noton* means back; lateral expansions of arthropoid notum or tergum.
**perennial**: lasting from year to year.
**phenology**: the recording and study of periodic biotic events such as breeding or flowering in relation to climate and other factors.
**phylogenesis**: history of the development of a species.
**phylogenetic**: race or descent.
**phylogeny**: the evolutionary history or development of a species.

**phytophagous**: herbivorous, feeding on plants.
**pilose**: hairy, downy.
**pleural areas**: sides of thorax.
**polyneural venation**: with many branched veins, like dragonfly wing venation.
**postclypeus**: posterior part of clypeus.
**postdiscal**: beyond the discal area.
**pronotal incisures**: grooves of the pronotum.
**pronotum**: the dorsal part of the prothorax.
**proximal**: closest to.
**pubescence**: downy or hairy covering.
**pubescent**: covered with soft hair or down.
**pygofer**: the last segment of the abdomen.

## R

**radial cell**: cell in the radial sector of a wing.
**reticulation**: network.
**rostrum**: the piercing and sucking mouthparts of true bugs.

## S

**saccate**: pouched, gibbous.
**sclerotisation**: hardening by increasing thickness occurring in spaces.
**setae**: bristles, hairs.
**stria**: grooves, streaks, narrow lines.
**striated**: marked by lines or grooves, usually parallel.
**sulcate**: furrowed, grooved.
**sulci**: furrows, grooves.
**sympatric**: having same or overlapping geographic distribution.
**syntype**: all specimens originally used to describe a species when no primary type has been designated.

## T

**tegmina**: leathery forewings.
**tergites**: (from Latin *tergum*, meaning back) dorsal plate of each segment.
**trochanter**: second segment of leg from body, between coxa and femur.

## U

**ulnar cells**: cells across the wing, not reaching the margin.

## V

**vannus**: anal lobe of hindwing of some insects; the limbus of cicadas.
**variegated**: mottled variation of pigmentation.
**venation**: the system of veins in a wing.
**virescent**: turning green or greenish.
**vitreous**: hyaline, transparent, glass-like.
**vittate**: having ridges, stripes or bands lengthways.

## X

**xeric**: arid conditions.

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## Enquiries

SANBI Bookshop, South African National Biodiversity Institute, Private Bag X101,
Pretoria, 0001 South Africa.
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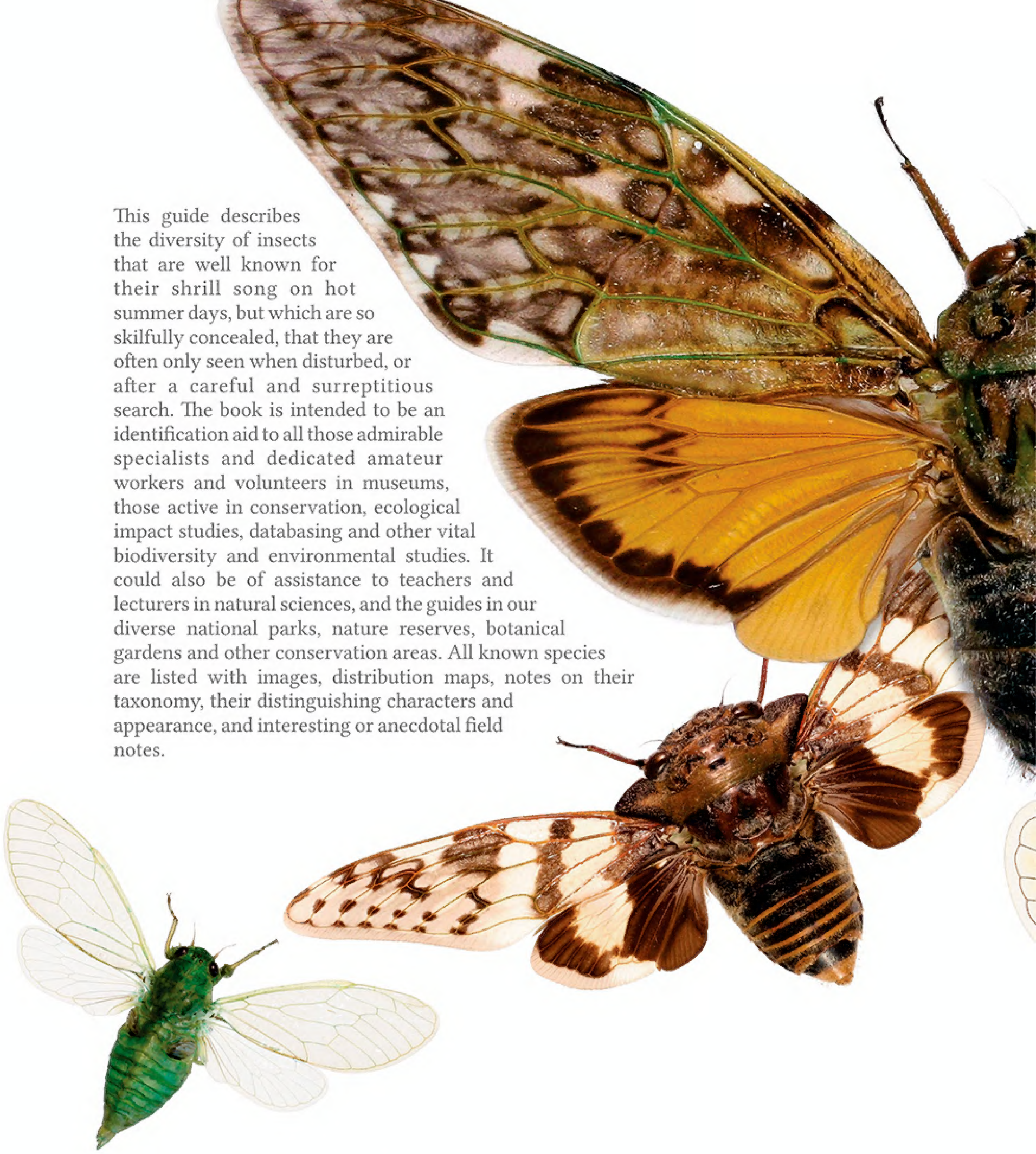
This guide describes the diversity of insects that are well known for their shrill song on hot summer days, but which are so skilfully concealed, that they are often only seen when disturbed, or after a careful and surreptitious search. The book is intended to be an identification aid to all those admirable specialists and dedicated amateur workers and volunteers in museums, those active in conservation, ecological impact studies, databasing and other vital biodiversity and environmental studies. It could also be of assistance to teachers and lecturers in natural sciences, and the guides in our diverse national parks, nature reserves, botanical gardens and other conservation areas. All known species are listed with images, distribution maps, notes on their taxonomy, their distinguishing characters and appearance, and interesting or anecdotal field notes.



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